

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The Proposed Action is to establish the Second F-22A Operational Wing at Elmendorf Air Force Base (AFB). This chapter describes the Proposed Action and optional beddown facility locations to accomplish the Proposed Action. The No Action Alternative, which would not beddown the F-22A at Elmendorf AFB at this time, is also discussed.

Establishment of the Second F-22A Operational Wing at Elmendorf AFB is proposed to take place over a period of approximately five years and would involve construction of facilities to support the aircraft and training personnel needed to operate and maintain the aircraft and associated facilities.

Each of the two F-22A squadrons proposed for Elmendorf AFB would be composed of 18 Primary Aircraft Inventory (PAI) plus 2 Backup Aircraft Inventory (BAI). As such, the two squadron F-22A Operational Wing would include 36 PAI and 4 BAI aircraft. PAI consists of the aircraft authorized and assigned to perform the squadron's missions in training, deployment, and combat. BAI includes those aircraft additional to the PAI that are used as substitutes for PAI aircraft.

PRIMARY AIRCRAFT INVENTORY (PAI) ARE AIRCRAFT ASSIGNED TO MEET THE PRIMARY AIRCRAFT AUTHORIZATION OR PAA. BACKUP AIRCRAFT INVENTORY (BAI) ARE AIRCRAFT ABOVE THE PAI TO PERMIT SCHEDULED AND UNSCHEDULED DEPOT LEVEL MAINTENANCE, MODIFICATIONS, INSPECTIONS AND REPAIRS, AND CERTAIN OTHER MITIGATING CIRCUMSTANCES WITHOUT REDUCTION OF AIRCRAFT AVAILABLE FOR THE ASSIGNED MISSION. BAI MAY ALSO BE REFERRED TO AS BACKUP AIRCRAFT AUTHORIZATION OR BAA.

Unrelated to a decision on the F-22A beddown, the Base Realignment and Closure (BRAC) Act (BRAC 2005) directed that one of the two squadrons of F-15C aircraft and the single F-15E squadron be relocated from Elmendorf AFB. When completed, the BRAC action would leave one squadron of 18 PAI and 2 to 3 BAI F-15C aircraft at Elmendorf AFB.

The beddown of the Second F-22A Operational Wing would take place in the following stages:

- 1st Operational Squadron in Fiscal Year (FY) 2008
- 2nd Operational Squadron in FY 2009

ACTIVITIES AFFECTING ELMENDORF AFB

- BEDDOWN TWO F-22A OPERATIONAL SQUADRONS OVER A PERIOD OF APPROXIMATELY FIVE YEARS.
- CONDUCT FLYING SORTIES AT THE BASE FOR TRAINING AND DEPLOYMENT.
- CONSTRUCT THE FACILITIES AND INFRASTRUCTURE NECESSARY TO SUPPORT THE F-22A OPERATIONAL WING.
- IMPLEMENT THE PERSONNEL CHANGES AT THE BASE TO CONFORM TO THE F-22A WING'S REQUIREMENTS.

ELEMENTS AFFECTING ALASKAN AIRSPACE

- CONDUCT F-22A TRAINING FLIGHTS IN MOAs, AIR TRAFFIC CONTROL ASSIGNED AIRSPACE (ATCAA), AND RANGES.
- EMPLOY DEFENSIVE COUNTERMEASURES (CHAFF AND FLARES) IN AIRSPACE AUTHORIZED FOR THEIR USE.
- TRAIN FOR EMPLOYMENT OF LONG RANGE STAND-OFF WEAPONS AND OTHER MUNITIONS.

F-22A training is needed to maintain operational capabilities. The F-22A needs both air-to-air and air-to-ground training airspace and range facilities for pilots to achieve and maintain skills. Elmendorf AFB has adequate training airspace and does not propose any airspace changes. Associated Army ranges provide limited air-to-ground capabilities for close-in F-22A training. Long Range Stand-Off Weapons (LRSOW) training can be simulated in existing airspace.

The proposed beddown of the F-22A Operational Wing would involve several activities at Elmendorf AFB. These activities would occur at the base and in the associated training airspace.

This chapter presents three construction options for facilities at Elmendorf AFB. This chapter also presents

proposed activities at the base, training use of Special Use Airspace (SUA), use of air-to-ground ranges, and personnel associated with an Elmendorf AFB F-22A Second Operational Wing beddown. The No Action Alternative is described in conformance with the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1502.14(d)) in Section 2.2.4. Alternatives considered but not carried forward for analysis are discussed in Section 2.3.

2.1 ELEMENTS AFFECTING ELMENDORF AFB

The proposed beddown of an F-22A Operational Wing at Elmendorf AFB could affect three aspects of the base:

1. The beddown and flight activity of a new aircraft with different performance characteristics from existing aircraft could affect the base and its environs. This section describes existing and proposed flight activities near the base.
2. The beddown would require the planning, design, and construction of facilities at Elmendorf AFB over a period of years. Three options for beddown facilities are described in this section.
3. The beddown would affect the numbers and responsibilities of base personnel. The proposed personnel change is described in this section.

Base Flight Activities. F-22A aircraft would use the base runways and fly in the base environs similar to the comparably sized F-15C and F-15E aircraft do today. This includes take-off and landings, training, and deployments.

The United States Air Force (Air Force) anticipates that, by completion of the beddown, the Elmendorf F-22A Operational Wing would fly approximately 5,500 sorties per year from Elmendorf AFB. Additionally, the Air Force could continue occasional use of other Alaskan locations at the same levels currently used by the F-15C and F-15E aircraft. Based on projected requirements and deployment patterns under the Aerospace Expeditionary Forces (AEF) program, the F-22A Operational Wing would fly an additional 2,800 sorties at overseas airfields during deployments or at other locations for exercises or in preparation for deployments.

A SORTIE IS THE FLIGHT OF A SINGLE AIRCRAFT FROM TAKEOFF TO LANDING.

Operational F-22A squadrons proposed for Elmendorf AFB would be integrated into the Air Force's Expeditionary Air Force (EAF) Construct. The EAF Construct grew out of the need for the United States (U.S.) to deploy forces worldwide despite the reduction in U.S. overseas basing and personnel. Under the EAF, the Air Force has divided its forces into 10 AEFs and 2 Aerospace Expeditionary Wings to make worldwide deployments more predictable and manageable. An AEF is a "package" (group of different types of aircraft with a mixture of capabilities suited to the tasking) deployed to overseas locations for about 120 days. These AEFs consist of wings or squadrons from multiple U.S. bases that operate as a unit or are integrated with other forces overseas. Pre- and/or post-deployment training, at locations other than a "home" base, also occurs for about another 30 days out of the year. Squadrons or wings at the bases are rotated into the AEF program on a 20-month cycle. Elmendorf AFB's F-15C and F-15E squadrons are currently part of the AEF program.

On average, each squadron would be deployed for 165 days per AEF cycle (120 days AEF and 45 days pre- or post-AEF training). In addition, each squadron would participate in training

exercises and operate out of another U.S. or overseas base for an average of one week per year, flying another 220 sorties at remote locations other than Elmendorf AFB. Due to seasonal constraints in Alaska (e.g., long daylight hours in summer), F-15Cs or F-15Es from Elmendorf AFB occasionally deploy to southern bases to meet training requirements. Some of the F-22A sorties while deployed would involve ordnance delivery training or missile firing at approved ranges such as the Nellis Range Complex in Nevada, Utah Test and Training Range, or Eglin AFB ranges, including over-water ranges in the Gulf of Mexico.



DUE TO LONG HOURS OF DARKNESS DURING THE WINTER MONTHS, AIRCREWS OPERATING FROM ELMENDORF AFB CAN FULFILL NIGHT-FLYING REQUIREMENTS WITHOUT FLYING DURING ENVIRONMENTAL NIGHT (AFTER 10:00 P.M. AND BEFORE 7:00 A.M.).

Elmendorf AFB F-22As would fly the same percentage (30 percent) of sorties after dark (i.e., about one hour after sunset) as required for the F-15Cs and F-15Es under the Air Force's initiative to increase readiness. Aircrews operating from Elmendorf AFB can normally fulfill the annual night flying requirements during winter months without flying after 10:00 p.m. or before 7:00 a.m. to be consistent with the Elmendorf AFB noise abatement program.

The F-15Cs and F-15Es at Elmendorf AFB use afterburner for takeoff the majority of the time, depending upon the seasons and factors such as temperature and humidity. F-22A larger engines and improved aerodynamics will reduce the number of afterburner takeoffs by 95 percent as compared to current F-15C and F-15E operations.

Elmendorf AFB Facilities. The Elmendorf AFB beddown is for an Operational Wing of F-22A aircraft. The F-22A is a new weapon system. As such, the F-22A requires additional or upgraded facilities to ensure the combat readiness and capability of the system. These new facilities will provide for and protect the characteristics noted in Section 1.1.2, including stealth, higher performance engines, advanced electronics, and maintenance procedures.

Base Realignment and Closure (BRAC) will relocate one F-15C squadron and one F-15E squadron from Elmendorf AFB. The departure of these aircraft permits the possible reuse of some base facilities and provides space that had been previously used by the departing squadrons.



ONE EXISTING F-15C SQUADRON AND ONE F-15E SQUADRON WOULD RELOCATE FROM ELMENDORF AFB AS PART OF BRAC.

There are three options for facilities to accomplish the Proposed Action. The three options for base facilities take into consideration the BRAC action in the identification of facilities and locations to meet F-22A beddown requirements. Table 2.1-1 summarizes the facility requirements for Options A, B, and C. Sections 2.1.1 through 2.1.3 detail the activities, facilities, and personnel for each option.

TABLE 2.1-1. SUMMARY OF FACILITY REQUIREMENTS

<i>Number of Projects</i>	<i>Project Type</i>	<i>Building Square Feet</i>	<i>Estimated Facility Cost</i>
Option A - Construction of New Fighter Town East (FTE) Facilities			
19	14 New Facilities	598,814	\$402 million
	1 Renovation		
	4 Infrastructure		
Option B - Renovation of F-15E Facilities and Construction of New FTE Facilities			
19	13 New Facilities	423,663	\$323 million
	3 Renovation		
	3 Infrastructure		
Option C - Renovation of F-15C and F-15E Facilities and Construction of New FTE Facilities			
21	13 New Facilities	379,080	\$325 million
	5 Renovation		
	3 Infrastructure		

2.1.1 OPTION A ACTIVITIES, FACILITIES, AND PERSONNEL

Option A Activities. The BRAC decision to draw down one F-15C squadron and one F-15E squadron will reduce total fighter aircraft based at Elmendorf by 42 PAI plus BAI aircraft. The proposed beddown of 36 PAI and 4 BAI F-22A aircraft would backfill the number of aircraft assigned to Elmendorf AFB. The F-22A Second Operational Wing would be comprised of two squadrons of 18 PAI aircraft each. The number of F-22A sorties would be as described in Section 2.1.

Table 2.1-2 presents the types and number of aircraft currently assigned and proposed for Elmendorf AFB. This table permits a comparison of current aircraft assignments and proposed F-22A beddown assignments.

TABLE 2.1-2. BASELINE AND PROPOSED AIRCRAFT (PAI) ASSIGNED TO ELMENDORF AFB

<i>Aircraft Type</i>	NUMBER ASSIGNED	
	<i>Baseline</i>	<i>Proposed</i>
F-15C	42	18
F-15E	18	0
F-22A	0	36
C-17 ¹	8	8
C-130 ²	18	16
C-12	3	3
E-3A	2	2

Note: 1. Air Force 2004a.

2. Beddown as part of Air National Guard and BRAC actions.

Elmendorf AFB supports operations of F-15C, F-15E, C-12, C-17, C-130, E-3A, and aero-club based aircraft, as well as a range of transient users. On an annual basis, the installation has supported the levels of aviation operations shown in Table 2.1-3. An operation can be a take-off or departure, a landing or arrival, or a touch-and-go within a closed pattern around the airfield.

TABLE 2.1-3. ELMENDORF AFB AIRFIELD ANNUAL OPERATIONS

<i>Fiscal Year</i>	<i>Number of Operations</i>
2000	65,816
2001	62,312
2002	52,924
2003	61,969
2004	44,318
2005	41,340

Operations conducted in FY 2004 and 2005 were influenced by several external factors. In FY 2004, many assigned units were deployed overseas. In FY 2005, major runway construction occurred. Operations staff at the 3rd Wing (3 WG) indicates that traffic handled in FY 2003 is most representative of the installation's annual demand.

Option A Facilities. Option A would develop new facilities to house both squadrons of F-22A aircraft in the southeast portion of the base (Figure 2.1-1). This development, identified in the Base's Strategic Plan as Fighter Town East (FTE), would include a total of 19 construction, renovation, or infrastructure improvement projects implemented over the period from 2006 to 2009 (Table 2.1-4) with an estimated cost of \$402 million. Construction in this location would consolidate all F-22A mission facilities, provide opportunities for future expansion, and not require any waivers from flight safety regulations. Option A would include construction of 14 new facilities with a total square footage of 598,814. Option A also includes demolition of 2 facilities; 9637-Sentry Gatehouse as part of the Low Observable Project and 10641-Igloo, totaling 5,500 square feet. Option A includes the construction of approximately 22.0 acres of new taxiway and apron and infrastructure. The option would also call for the renovation of the Egress Shop.

Most construction would occur in 2007 and 2008, although some projects would continue through 2009. The squadron operations/six bay hangars and flow through weather shelters would not be available until 2009 or 2010, depending on funding. In total, the construction, renovation, and infrastructure improvements for Option A would affect about 50 acres. Affected acres represent the area covered by the construction footprints of the proposed facilities plus the surrounding lands where construction-related clearing and grading would occur. Infrastructure upgrades, such as connecting new facilities to water and power systems, would also count in the affected area. No construction is expected at any other locations which may be used occasionally as forward operating bases.



OPTION A WOULD CONSTRUCT NEW FACILITIES ON PREVIOUSLY DISTURBED LAND TO CONSOLIDATE F-22A SQUADRONS IN FIGHTER TOWN EAST.

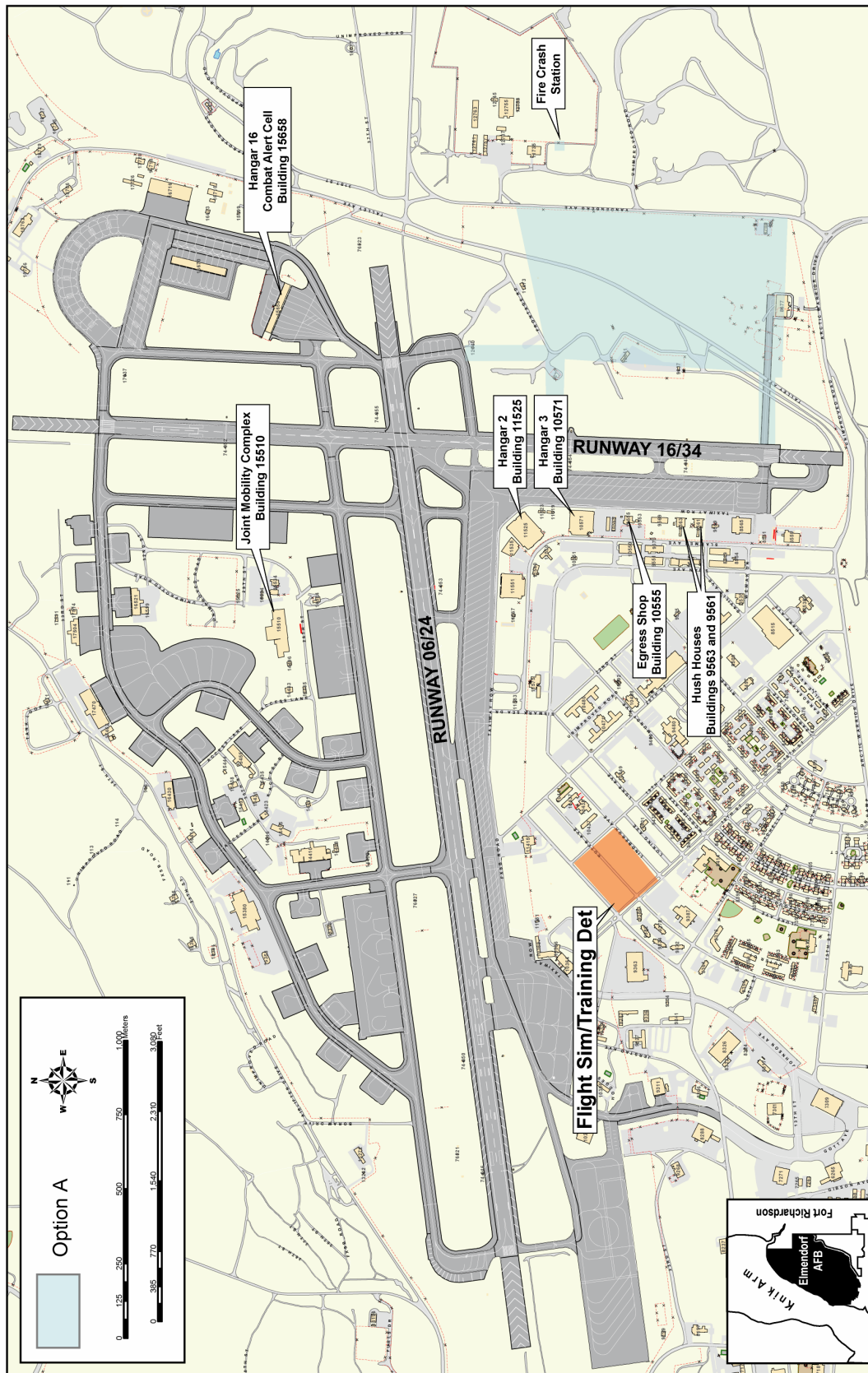


FIGURE 2.1-1. OPTION A LOCATION

TABLE 2.1-4. OPTION A FACILITY REQUIREMENTS

<i>Project Name</i>	<i>Building Square Feet</i>
Fiscal Year 2007 Projects	
Corrosion Control, Low Observable, Composite Repair Facility, Phase 1	37,555
Igloos (replacements for Building 10641 to be demolished)	4,740
Fighter Town East (FTE) Infrastructure (Phase I)	26,545 linear feet or 2.44 acres
Fiscal Year 2007 Total	42,295
Fiscal Year 2008 Projects	
Flight Simulator	25,618
Field Training Detachment Facility	13,606
Corrosion Control, Low Observable, Composite Repair Facility, Phase 2	40,892
Jet Engine Inspection and Maintenance Facility	33,734
Aerospace Ground Equipment (AGE) Maintenance Shop	11,055
Weapons Release Systems Shop and Alternate Mission Equipment Storage	31,775
Munitions Load Crew Training Facility	27,610
4-Bay Flow through Weather Shelter (FTE)	26,253
8-Bay Flow through Weather Shelter (FTE)	51,484
Squadron Operations/ Aircraft Maintenance Unit (AMU)/6 Bay Hangar	72,183
Apron and Taxiway	14.5 acres
Fire/Crash Station	13,972
Egress Shop - Building 10555 - Renovations ¹	
Squadron Operations/ Aircraft Maintenance Unit (AMU)/ 6 Bay Hangar	72,183
10-Bay Flow through Weather Shelter (FTE)	64,100
Additive Apron (Phase II)	4.5 acres
FTE Infrastructure (Phase II)	0.55 acres
Combat Alert Cell	20,570
Fiscal Year 2008 Total	556,519
Project Totals	598,814

Note: 1. Renovations do not include increases to square footage.

Construction of the four flow-through aircraft weather shelters, two hangars, and taxiway/apron modifications represent the most substantial construction projects proposed at Elmendorf AFB. These projects account for 47 percent of the affected acres and would be constructed outside of the clear zone east of Runway 16/34.

Option A also includes three new military construction (MILCON) projects constructed outside of the flightline and FTE area. A Flight Simulator facility and a Field Training Detachment facility would be constructed adjacent to the newly constructed C-17 Flight Simulator within the area between 18th and 19th Streets and Fighter Drive and Lindbergh Avenue. Additional munitions storage facilities would be constructed on the north side of the base at the Six Mile Munition Site to replace the capability lost with the demolition of Building 10641.

Demolition Activities. Prior to demolition of the two facilities, Elmendorf AFB would contract to have any asbestos-containing materials and lead-based paint removed and properly disposed of in accordance with federal and state regulations. Site preparation would include establishing a buffer zone around the involved facilities. The proposed demolition would include complete dismantling and removal of all facility structures, equipment and machinery, in accordance with applicable regulatory requirements to ensure proper handling and disposition of the waste. All utilities would be capped or disconnected. Materials from all facilities proposed for demolition would be recycled to the greatest extent practicable.

The demolition contractor would dispose of the remaining materials in an approved landfill in accordance with state and local regulations and utilizing an established haul route for equipment delivery and debris removal. The demolition would involve minimal ground disturbance and any areas that may be disturbed by the demolition would be restored to prevent any long-term soil erosion. Frequent spraying of water on exposed soil during ground disturbance and demolition activities, proper soil stockpiling methods, and prompt replacement of ground cover or pavement are standard construction procedures that could be used to minimize the amount of dust generated during demolition.

Renovation and Construction Activities. With the start of building construction, each building site would be graded and sediment and erosion controls would be installed. These standard construction practices would include the installation of a silt fence, storm drain inlet protection, temporary sediment traps, and diversion dikes within project limits prior to commencement of any on-site work. All development activities would be performed in accordance with current security and force protection requirements.

Prior to construction or demolition at any site, a construction laydown area and haul route would be established and coordinated with 3rd Civil Engineering Squadron (3 CES). Appropriate erosion and siltation controls would be implemented and maintained in effective operating condition prior to, and throughout all construction and demolition activities.

Similarly, fugitive dust would be controlled by the use of standard construction practices. In all cases where construction disturbs the existing vegetation or other ground surface, the contractor would revegetate the area as approved by the base or restore the surface as directed by the base.

The Air Force will ensure that a proper Base Civil Engineer Work Clearance Request is processed and routed through 3 CES/CEV for each construction area in accordance with 3 WG Instruction 32-1007 (2006).

Option A Personnel. Beddown of the Second F-22A Operational Wing would require personnel to operate and maintain the wing and to provide necessary support services. Fewer personnel, particularly for maintenance, would be needed for an F-22A squadron than for an equivalent F-15C or F-15E squadron. For Elmendorf AFB, the F-22A personnel positions would be drawn from the equivalent positions associated with existing manpower authorizations. As such, total on-base personnel would be reduced by 669 positions from the personnel numbers associated with the departing F-15C and F-15E squadrons. Table 2.1-5 details the manpower requirements to support the F-22A wing.

TABLE 2.1-5. MANPOWER REQUIREMENTS

	MANPOWER REQUIREMENTS			
	<i>Officer</i>	<i>Enlisted</i>	<i>Civilian</i>	<i>Total</i>
F-15C ¹	57	722	34	813
F-15E ¹	71	698	33	802
F-22A ²	92	661	193	946

Note: 1. Requirements for one squadron.

2. Requirements for two squadrons.

2.1.2 OPTION B ACTIVITIES, FACILITIES, AND PERSONNEL

Option B Activities. Under Option B, as with Option A, 36 PAI and 4 BAI F-22A aircraft would be assigned to Elmendorf AFB. The number of annual sorties would be the same as those described in Section 2.1.

Option B Facilities. Option B combines renovation and construction to efficiently achieve the Proposed Action. Option B is the Air Force's preferred beddown alternative. Option B utilizes or modifies existing F-15E facilities (Hangars 15 and 17) to provide the ability to accept earlier delivery of the F-22A than Option A. New F-22A facilities would be constructed outside the clear zone with the majority of them located in the FTE area. Construction outside the clear zone improves on-base safety. Flight Simulator/Field Training Detachment, propulsion capabilities, egress bay, armament maintenance, and Alternate Mission Equipment storage would be constructed as would be required for Option A. Aerospace Ground Equipment facilities and security/intelligence management information system upgrades would also be required. This development would include construction of 13 new facilities totaling 423,663 square feet and renovation of 3 buildings and 3 infrastructure improvement projects. These projects would be implemented over the period from 2006 to 2009 (Table 2.1-6) at an estimated cost of \$323 million. Figure 2.1-2 presents the location for these facilities under Option B. An estimated 30 acres would be disturbed for construction and facilities under this option.

TABLE 2.1-6. OPTION B FACILITY REQUIREMENTS

<i>Project Name</i>	<i>Building Square Feet</i>
Fiscal Year 2007 Projects	
Corrosion Control, Low Observable, Composite Repair Facility, Phase 1	37,555
Igloos (replacements for Building 10641 to be demolished)	4,740
Fighter Town East (FTE) Infrastructure (Phase I)	26,545 linear feet or 2.44 acres
Building 16716 (Hangar 15) - Renovations ¹	73,421
Building 16670 (Hangar 17) - Renovations ¹	49,557
Fiscal Year 2007 Total	42,295
Fiscal Year 2008 Projects	
Flight Simulator	25,618
Field Training Detachment Facility	13,606
4-Bay Flow through Weather Shelter (North Side)	26,253
Corrosion Control, Low Observable, Composite Repair Facility, Phase 2	40,892
Jet Engine Inspection and Maintenance Facility	33,734
Aerospace Ground Equipment (AGE) Maintenance Shop	11,055
Weapons Release Systems Shop and Alternate Mission Equipment	31,775
Weapons Load Training Facility	27,610
10-Bay Flow through Weather Shelter (FTE)	64,100
Squadron Operations/ Aircraft Maintenance Unit (AMU)/ 6 Bay Hangar (FTE)	72,183
Apron and Taxiway	14.5 acres
Fire/Crash Station	13,972
Egress Shop - Building 10555 - Renovations ¹	
FTE Infrastructure (Phase II)	0.55 acres
Combat Alert Cell	20,570
Fiscal Year 2008 Total	381,368
Project Totals	423,663

Note: 1. Renovations do not include increases to square footage .

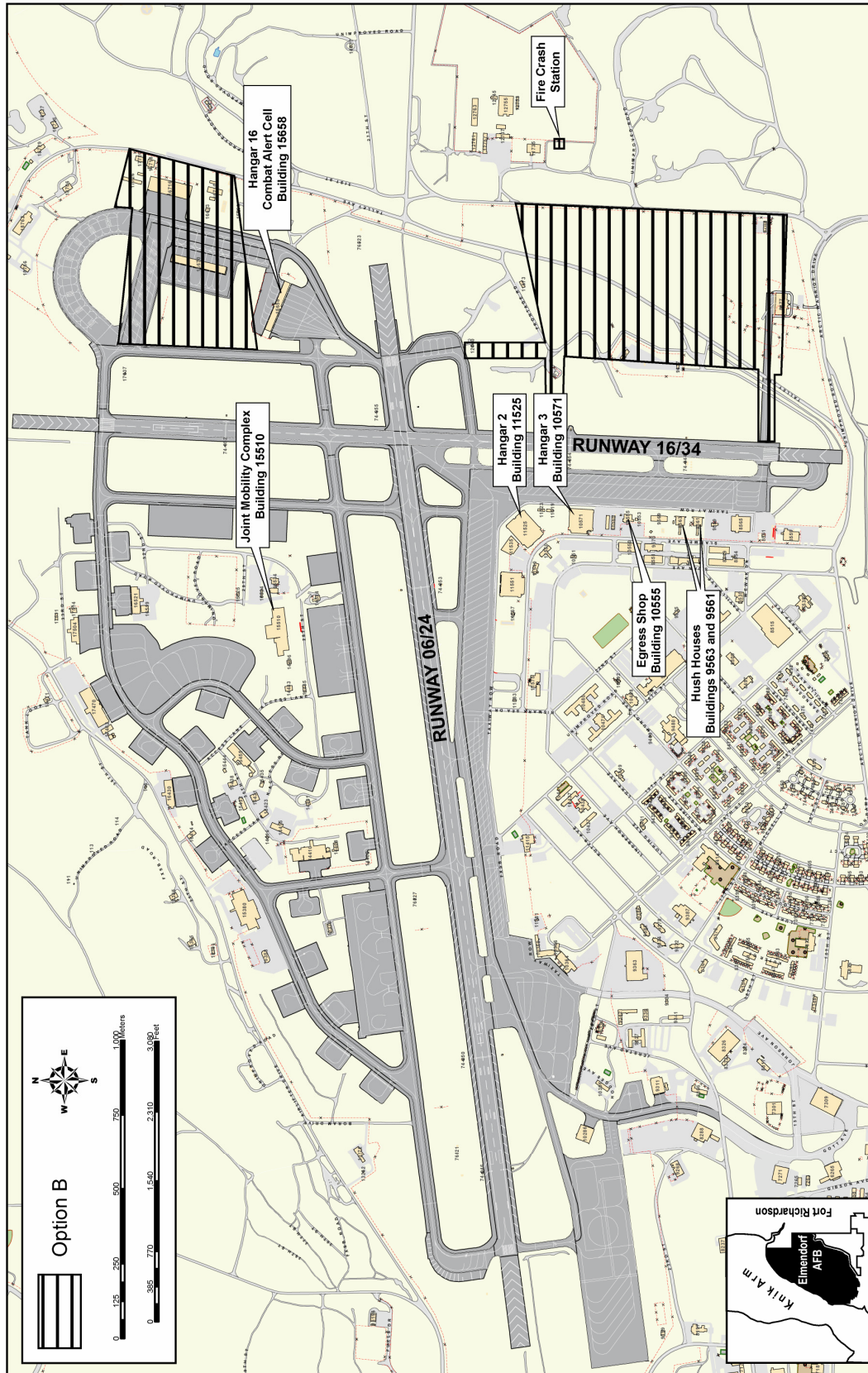


FIGURE 2.1-2. OPTION B LOCATIONS

Option B Personnel. Option B personnel requirements would be the same as those associated with Option A. Personnel would have some differences in job location and on-base commute pattern in response to the location of facilities to support the F-22A beddown.

Option C Activities. Option C aircraft assigned to Elmendorf AFB and the number of annual sorties would be the same as those described in Section 2.1.

Demolition, Renovation, and Construction Activities. Demolition activities, including asbestos and other hazardous materials would be treated the same as described for Option A. Materials recycling, soils stockpiling, and waste disposal for Option C would be as described under Option A. Grading, sediment control, security, fugitive dust control, and other practices described for Option A would be applicable for Option C.

Option C Personnel. Option C personnel requirements are projected to be the same as those associated with Option A. Personnel would have some differences in job location in the co-located facilities and increased vehicular travel among the sites could be required to support the dispersed operations. There would be some difference in on-base commute pattern in response to the location of different facilities to support the F-22A beddown.

TABLE 2.1-7. OPTION C FACILITY REQUIREMENTS

<i>Project Name</i>	<i>Building Square Feet</i>
Fiscal Year 2007 Projects	
Corrosion Control, Low Observable, Composite Repair Facility, Phase 1	37,555
Igloos (replacements for Building 10641 to be demolished)	4,740
Fighter Town East (FTE) Infrastructure (Phase I)	26,545 linear feet or 2.44 acres
Building 16716 (Hangar 15) - Renovations ¹	73,421
Building 16670 (Hangar 17) - Renovations ¹	49,557
Fiscal Year 2007 Total	42,295
Fiscal Year 2008 Projects	
Flight Simulator	25,618
Field Training Detachment Facility	13,606
4-Bay Flow through Weather Shelter (North Side)	26,253
Corrosion Control, Low Observable, Composite Repair Facility, Phase 2	40,892
Jet Engine Inspection and Maintenance Facility	33,734
Aerospace Ground Equipment (AGE) Maintenance Shop	11,055
Weapons Load Training Facility	27,610
Munitions Loading Crew Training Facility	27,600
10-Bay Flow through Weather Shelter (FTE)	64,100
Apron and Taxiway	14.5 acres
Fire/Crash Station	13,972
Egress Shop - Building 10555 - Renovations ¹	
Building 10571 (Hangar 3) - Renovations ¹	
Weapons Release Systems Shop and Alternate Mission Equipment	31,775
Building 11525 (Hangar 2) - Renovations ¹	
FTE Infrastructure (Phase II)	0.55 acre
Combat Alert Cell	20,570
Fiscal Year 2008 Total	336,785
Project Totals	379,080

Note: 1. Renovations do not include increases to square footage.

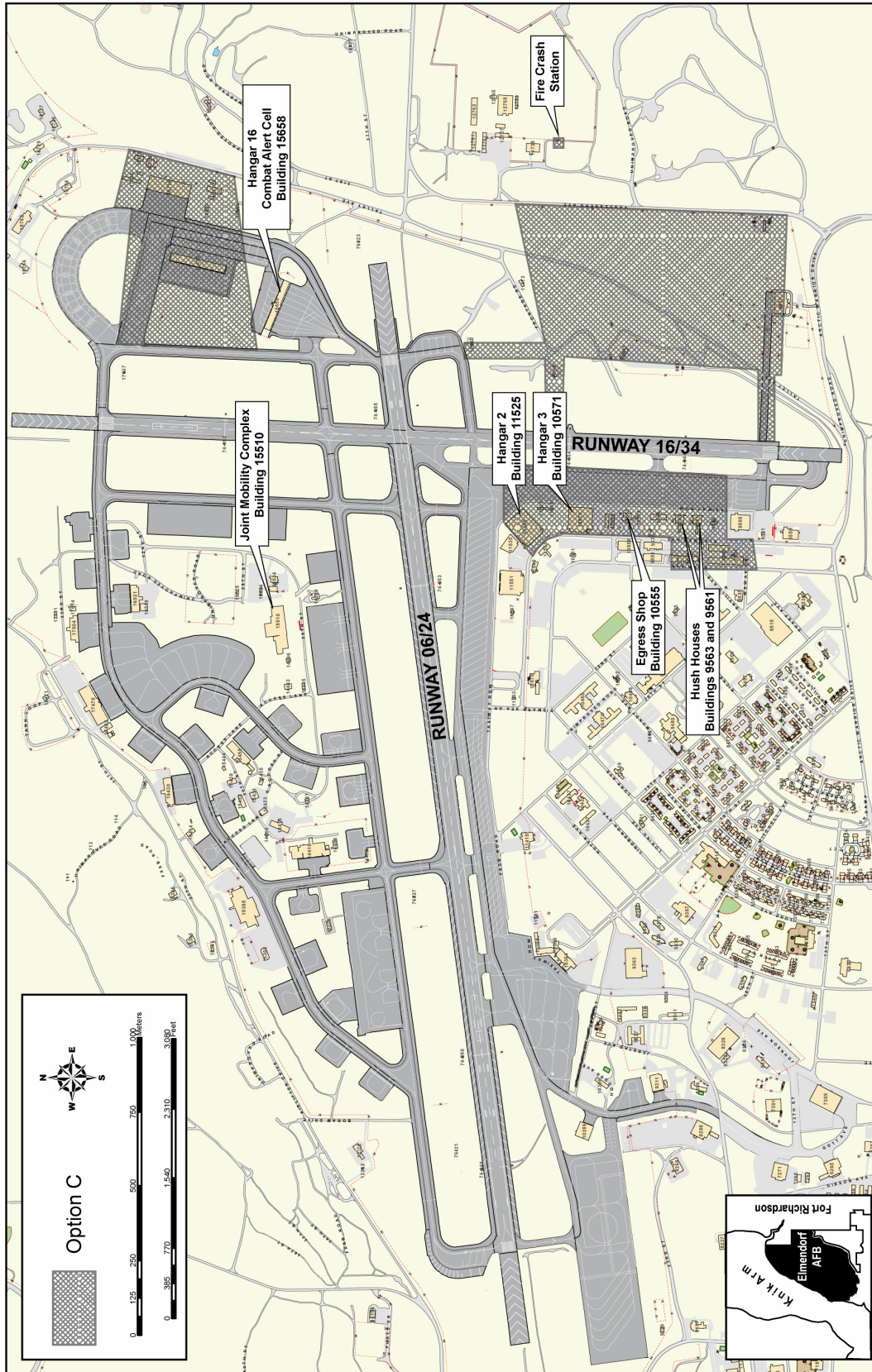


FIGURE 2.1-3. OPTION C LOCATIONS

2.1.4 NO ACTION ALTERNATIVE AT ELMENDORF AFB

No Action for this Environmental Assessment (EA) means no beddown of the Second F-22A Operational Wing would occur at Elmendorf AFB at this time. Analysis of the No Action Alternative provides a benchmark and enables decision-makers to compare the magnitude of the environmental effects of the proposal. Section 1502.14(d) of the National Environmental Policy Act (NEPA) requires an EA to analyze the No Action Alternative. In this case, as a result of BRAC action, one F-15C squadron and one F-15E squadron are scheduled to be relocated from Elmendorf AFB. If No Action resulted in no F-22A aircraft being assigned to Elmendorf AFB, there would be no F-22A related personnel changes and no facility construction.

Eleventh Air Force mission requirements would necessitate a review of the schedule for implementation of the required BRAC action. For this EA, No Action is the baseline condition, which currently has two squadrons of F-15C and one squadron of F-15E aircraft based at Elmendorf AFB. Taking no action could have local impacts and negatively affect the overall program for integrating the F-22A into the Air Force inventory. This could delay the fielding of the F-22A for operations and deployment. Delaying action could also add cost to the overall program.

2.2 ELEMENTS AFFECTING ALASKAN AIRSPACE

F-22As at Elmendorf AFB would conduct similar missions and training programs as the F-15Cs and some of the same missions and training programs of the F-15Es. The Air Force expects that the F-22A would use the training airspace associated with Elmendorf AFB in a manner similar to the F-15Cs and F-15Es currently based there. All F-22A flight activities would take place in existing airspace; no airspace modifications are proposed for the F-22A at this time.

There are five types of Alaskan training airspace used by Elmendorf AFB F-15C and F-15E aircraft for training. Figure 2.2-1 displays the types of airspace. Airspace managed by Elmendorf AFB associated with this proposed F-22A beddown includes Military Operations Areas (MOAs), Air Traffic Control Assigned Airspaces (ATCAAs), Military Training Routes (MTRs) and Warning Areas. Restricted airspace and the ranges supporting F-15E training are provided by joint use ranges at Stuart Creek (R-2205) and Oklahoma Ranges. Blair Lakes Range (R-2211) is exclusively used by the Air Force.

Operational requirements and performance characteristics of the F-22A dictate that most training would occur in MOAs and ATCAAs. MOAs are established by the Federal Aviation Administration (FAA) to separate military training aircraft from non-participating aircraft (those not using the MOA for training). When a MOA is active, the FAA routes other air traffic around it. Nonparticipating military and civil aircraft flying under visual flight rules may transit an active MOA by employing see-and-avoid procedures. When flying under instrument rules, nonparticipating aircraft must obtain an air traffic control clearance to enter an active MOA.

An ATCAA is airspace, often overlying a MOA, extending from 18,000 feet above mean sea level (MSL) to the altitude assigned by the FAA. Assigned on an as-needed basis and established by a letter of agreement between a military unit and the local FAA Air Route Traffic Control Center (ARTCC), each ATCAA provides additional airspace for training. ATCAAs are released to military users by the FAA only for the time they are to be used, allowing maximum access to the airspace by civilian aviation.

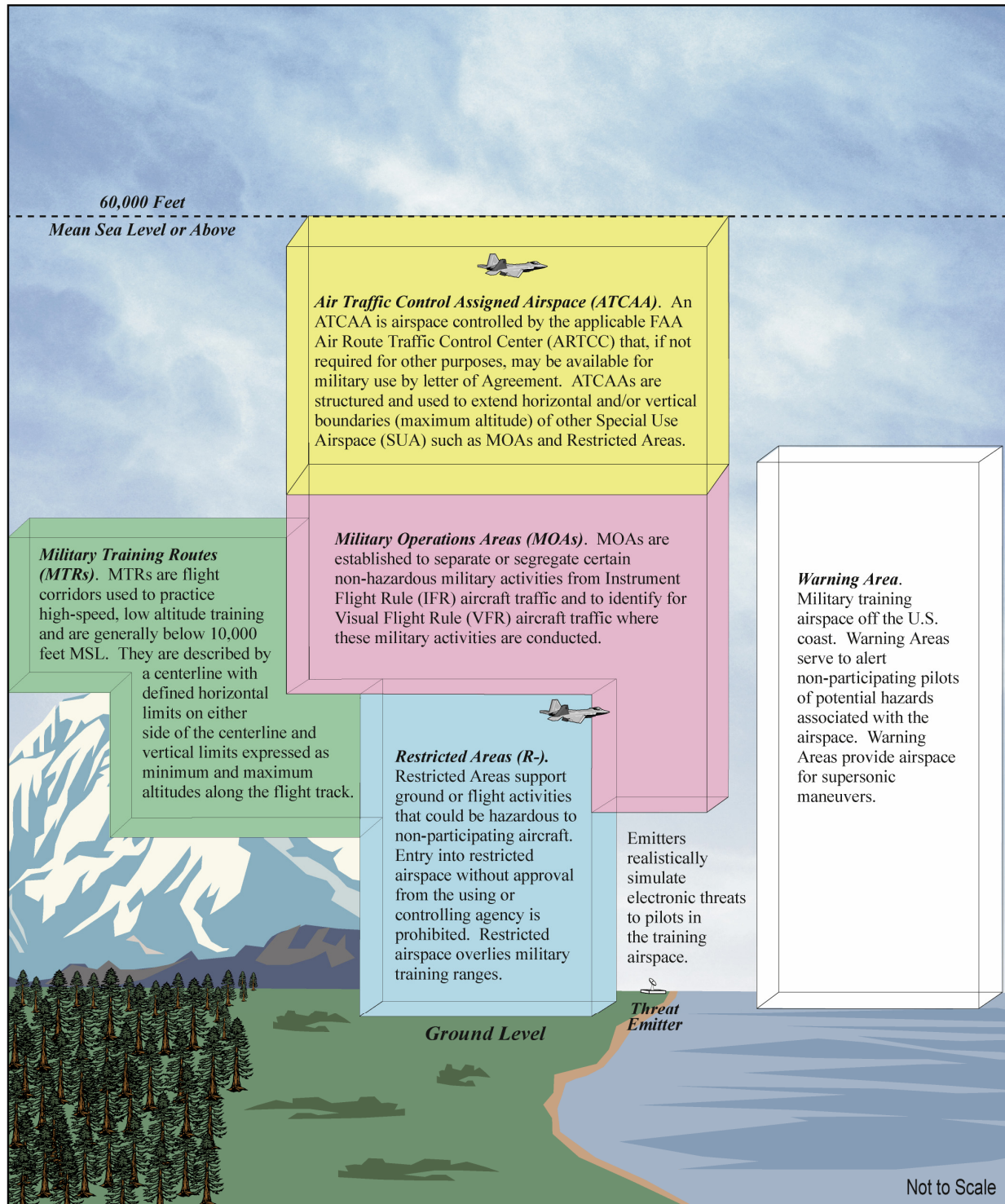


FIGURE 2.2-1. TYPES OF TRAINING AIRSPACE

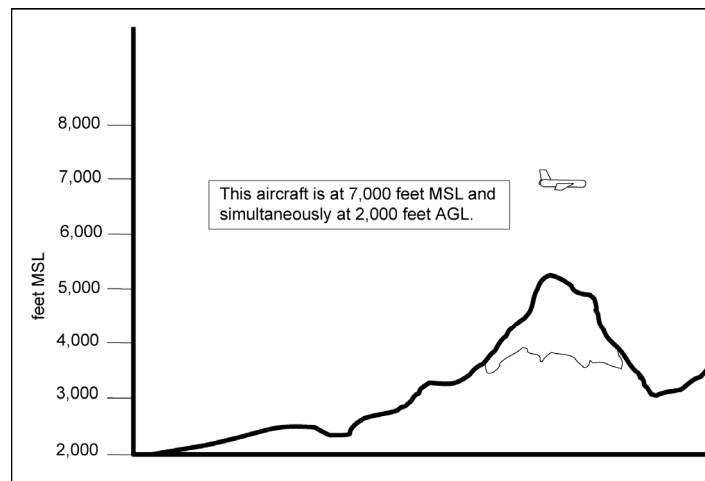
MTRs are flight corridors used to practice high-speed, low altitude training generally below 10,000 feet MSL. They are described by a centerline, with defined horizontal limits on either side of the centerline and vertical limits expressed as minimum and maximum altitudes along the flight track.

The F-22A would conduct numerous related training activities to fulfill its mission requirements. Table 2.2-1 describes the projected F-22A air superiority missions and training similar to those performed by the F-15C. F-22A training flights would closely match those performed by operational F-15C and F-15E aircraft in terms of nature and duration. Table 2.2-2 presents the training activities projected for F-22A similar to those performed by the F-15E. The F-22A would fly one and one-half to two hour long missions, including takeoff, transit to and from the training airspace, training activities, and landing. Depending upon the distance and type of training activity, the F-22A could spend between 20 to 60 minutes in a training airspace. On occasion during an exercise, the F-22A may spend up to 90 minutes in one or a set of airspace units. On average, the F-22A would fly the same percentage of time after dark (30 percent) as do the F-15C and F-15E currently using the airspace. Barring a national emergency or a large scale exercise, the after-dark sorties are not expected to occur during environmental night (10:00 p.m. to 7:00 a.m.).

The F-22A could use the full, authorized capabilities of the airspace units from 500 feet above ground level (AGL) to above 60,000 feet MSL. The F-22A would rarely (5 percent or less) fly below 5,000 feet AGL and consistently flies from 10,000 feet AGL to above 30,000 feet MSL (see Table 2.2-3.) Actual flight altitudes would depend upon the lower and upper limits of specific airspace units.



THE F-22A SPENDS MORE TIME TRAINING AT HIGHER ALTITUDES THAN THE F-15C OR F-15E.



**TABLE 2.2-1. PROJECTED F-22A TRAINING ACTIVITIES
SIMILAR TO F-15C TRAINING**

<i>Activity</i>	<i>Description</i>	<i>Airspace Type</i>	<i>Altitude (feet)</i>	<i>Time in Airspace</i>
Aircraft Handling Characteristics	Training for proficiency in use and exploitation of the aircraft's flight capabilities (consistent with operational and safety constraints) including, but not limited to high/maximum angle of attack maneuvering, energy management, minimum time turns, maximum/optimum acceleration and deceleration techniques, and confidence maneuvers.	MOA and ATCAA	5,000 AGL to 60,000 MSL	0.5 to 1.0 hour
Basic Fighter Maneuvers	Training designed to apply aircraft (1 versus 1) handling skills to gain proficiency in recognizing and solving range, closure, aspect, angle, and turning room problems in relation to another aircraft to either attain a position from which weapons may be launched, or defeat weapons employed by an adversary.	MOA and ATCAA	5,000 AGL to 30,000 MSL	0.5 to 1.0 hour
Air Combat Maneuvers	Training designed to achieve proficiency in formation (2 versus 1 or 2 versus 1+1) maneuvering and the coordinated application of Basic Fighter Maneuvers to achieve a simulated kill or effectively defend against one or more aircraft from a pre-planned starting position. Use of defensive countermeasures (chaff, flares). Air Combat Maneuvers may be accomplished from a visual formation or short-range to beyond visual range.	MOA and ATCAA	5,000 AGL to 60,000 MSL	0.5 to 1.0 hour
Low-Altitude Training	Aircraft offensive and defensive operations at low altitude, G-force awareness at low altitude, aircraft handling, turns, tactical formations, navigation, threat awareness, defensive response, defensive countermeasures (chaff/flares) use, low-to-high and high-to-low altitude intercepts, missile defense, combat air patrol against low/medium altitude adversaries.	MOA	500 AGL to 5,000 AGL	0.5 to 1.0 hour
Tactical Intercepts	Training (1 versus 1 up to 4 versus multiple adversaries) designed to achieve proficiency in formation tactics, radar employment, identification, weapons employment, defensive response, electronic countermeasures, and electronic counter countermeasures.	MOA and ATCAA	500 AGL to 60,000 MSL	0.5 to 1.0 hour
Night Operations	Aircraft intercepts (1 versus 1 up to 4 versus multiple adversaries) flown between the hours of sunset and sunrise, including tactical intercepts, weapons employment, offensive and defensive maneuvering, chaff/flare, and electronic countermeasures.	Warning Area, MOA, and ATCAA	2,000 AGL to 60,000 MSL	0.75 to 1.5 hour
(Dissimilar) Air Combat Tactics	Multi-aircraft and multi-adversary (2 versus multiple to larger force exercises) conducting offensive and defensive operations, combat air patrol, defense of airspace sector from composite force attack, intercept and simulate and destroy bomber aircraft, destroy/avoid adversary ground and air threats with simulated munitions and defensive countermeasures, strike-force rendezvous and protection.	MOA and ATCAA	500 AGL to 60,000 MSL	0.5 to 1.0 hour

MOA = Military Operations Area; ATCAA = Air Traffic Control Assigned Airspace; AGL = above ground level; MSL = mean sea level

TABLE 2.2-2. PROJECTED F-22A TRAINING ACTIVITIES SIMILAR TO F-15E TRAINING

<i>Activity</i>	<i>Description</i>	<i>Airspace Type</i>	<i>Altitude (feet)</i>	<i>Time in Airspace</i>
Navigation and Basic Surface Attack	Navigation on MTRs and air-to-ground simulated delivery of ordnance on a range.	MOA, Range	Surface to 18,000 MSL	0.5 to 1.0 hour
TACTICAL WEAPONS DELIVERY	More challenging multiple attack headings and profiles; pilot is exposed to varying visual cues, shadow patterns, and the overall configuration and appearance of the target. Supersonic speeds that can include target acquisition are added to the challenge.	ATCAA, MOA, Range	Surface to 60,000 MSL	0.5 to 1.0 hour
Surface Attack Tactics	Practiced in a block of airspace such as a MOA or Restricted Area that provides room to maneuver up to supersonic speeds. Defensive countermeasures may be deployed. Precise timing during the ingress to the target is practiced, as is target acquisition. Training includes egress from the target area and reforming into a tactical formation.	ATCAA, MOA, Range	Surface to 60,000 MSL	0.5 to 1.0 hour
LRSOW Delivery	Practiced in a MOA or ATCAA that provides for maneuvering room and supersonic speeds. Precise timing for speed, altitude, and launch parameters is practiced at high altitudes without release. Use of inert munitions in low altitude drops to evaluate timing and aircraft performance. Remote training using LRSOW at authorized ranges outside Alaska.	ATCAA, MOA, Range	Surface to 60,000 MSL	0.5 to 1.0 hour
Suppression of Enemy Air Defenses	Highly specialized mission requiring specific ordnance and avionics and can include supersonic speeds and defensive countermeasures. The objective of this mission is to simulate neutralizing or destroying ground-based anti-aircraft systems	ATCAA, MOA, Range	Surface to 60,000 MSL	0.5 to 1.0 hour
Large Force Exercises/Mission Employment	Multi-aircraft and multi-adversary composite strike force exercise (day or night), air refueling, strike-force rendezvous, conducting air-to-ground strikes, strike force defense and escort, air intercepts, electronic countermeasures, electronic counter-counter measures, combat air patrol, defense against composite force, bomber intercepts, destroy/disrupt/avoid adversary fighters, defensive countermeasure (chaff/flare) use.	MOA, MTR, ATCAA, and Range	Surface to 60,000 MSL	0.5 to 1.0 hour

MTR = Military Training Range; MOA = Military Operations Area; MSL = mean sea level; ATCAA = Air Traffic Control Assigned Airspace; LRSOW = Long Range Standoff Weapon

TABLE 2.2-3. COMPARABLE F-15C AND F-22A ALTITUDE USE

<i>Altitude (feet)</i>	<i>Percent of Flight Hours: F-15C/E</i>	<i>Percent of Flight Hours: F-22A</i>
>30,000 ¹	8%	30%
10,000-30,000	67%	50%
5,000-10,000	14%	15%
2,000-5,000	8%	3.75%
1,000-2,000	2.75%	1%
500-1000	0.25%	0.25%

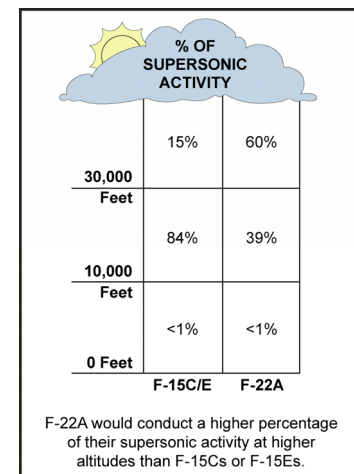
Note: 1. Operations by F-22As would emphasize use of higher altitudes more often than F-15Cs.

The F-22A would employ supersonic flight to train with the full capabilities of the aircraft. All supersonic flight would occur at altitudes and within airspace already authorized for such activities. The F-22A would fly approximately 25 percent of the time spent in MOAs and ATCAAs at supersonic speed. In comparison, the F-15Cs or F-15Es commonly conduct supersonic flight for about 7.5 percent of the time. The F-22A would fly higher and at supersonic speeds more often than either the F-15C or F-15E. The F-22A has greater performance capabilities and pilots must train to use those capabilities.

The F-22A has superior performance capabilities to fly at supersonic speeds for several reasons. First, the F-22A can fly at supersonic speeds without the use of afterburners. This means that F-22A pilots could attain supersonic speeds in the course of normal maneuvering without employing a separate procedure (i.e., lighting the afterburner). Second, because of supercruise, the F-22A can fly at supersonic speeds with less expenditure of fuel. As such, pilots would be able to use the F-22A's supersonic capability more consistently with less concern for fuel use. Third, improved aerodynamics in the F-22A make it "cut through" the air easily and enables the F-22A to fly faster (i.e., supersonic) with less resistance. Finally, in terms of its mission, more frequent use of supersonic speeds would provide an advantage when engaging enemy aircraft or when simulating LRSOW use. Supersonic speed would enable the F-22A to "close on" (fly toward) its target and set up to fire a missile more rapidly than an aircraft with less supersonic capability. After "taking the shot," the F-22A could use its speed to evade adversary missiles and aircraft.

More than 99 percent of supersonic flight would be conducted above 10,000 feet MSL, with 60 percent occurring above 30,000 feet MSL. In authorized airspace, supersonic flight could infrequently occur below 10,000 feet MSL.

F-22A operational aircraft would fly training flights in one or more of the Alaskan SUA. Activities in the training airspace are termed *sortie-operations*. A *sortie-operation* is defined as the use of one airspace unit by one aircraft. Each time a single aircraft flies in a different airspace unit, one sortie-operation is counted for that unit. Thus, a single aircraft can generate several sortie-operations in the course of a mission.



The affected airspace units at Elmendorf AFB consist of primary MOAs used by the F-15Cs and F-15Es on a continuing basis for routine training and secondary MOAs used by the F-15Cs and F-15Es predominantly for major flying exercises. Figure 2.2-2 presents these primary and secondary airspaces. ATCAAs overlie all the primary MOAs and all but two secondary MOAs. These ATCAAs may extend up to or above 50,000 feet MSL. Figure 2.2-3 presents a closer view of Restricted Areas with the air-to-ground ranges identified.

2.2.1 F-22A TRAINING FLIGHTS WITHIN ALASKAN AIRSPACE

The F-22A has the potential to use missiles or a gun in air-to-air engagements. Training for the use of these weapons is predominantly simulated. Simulating air-to-air attacks uses all the radar and targeting systems available on the F-22A, but nothing is fired. F-22A live-fire training would occur during specialized training or exercises at ranges authorized for these activities.

The current sortie-operations in Elmendorf AFB MOAs within Alaska are presented in Table 2.2-4. The F-15Cs use the primary MOAs (Susitna, Stony A and B, Naknek 1 and 2, and Galena) for 85 percent of all their training sortie-operations and F-15Es use these MOAs for 30 percent of their training sortie-operations. Elmendorf AFB's F-15Cs and F-15Es dominate use of the primary MOAs. After the beddown, the F-15Cs would continue to use the MOAs for 85 percent of their training and the F-22As are projected to fly 63 percent of the sortie-operations in the primary MOAs. Table 2.2-4 compares existing training of F-15C and F-15E aircraft with the proposed training activity of Elmendorf AFB-based F-22A and F-15C aircraft.

Currently, the F-15C aircraft do not regularly train on MTRs. F-15E aircraft train on a limited number of Alaskan MTRs as presented in Table 2.2-5. MTRs that are not regularly used for F-15E training flights are not included in the table. The F-22A is expected to have a training requirement that would require pilots to fly on MTRs for point-to-point navigation at subsonic speeds (Table 2.2-5). Figure 2.2-4 depicts MTRs regularly used for F-15E training. F-22A training would include incidental training in the Blying Sound Warning Area (W-612) (see Figure 2.2-2). A Warning Area is an over water airspace similar to range airspace over land.

2.2.2 AIR-TO-GROUND TRAINING

The F-22A has an air-to-ground mission. Based on the Initial F-22A Operational Wing experience, F-22A pilots are projected to spend 80 percent of their training in air-to-air missions and 20 percent of their training in air-to-ground training. The Elmendorf AFB F-22A Operational Wing air-to-ground training would represent an important part of the F-22A training program, although air dominance mission training would continue as the priority. Projected air-to-ground training activities for this F-22A Operational Wing are presented in Table 2.2-2.

Most air-to-ground training would be simulated, where no munitions would be released from the aircraft. The F-22As use avionics to simulate ordnance delivery on a target. This type of training could be conducted in any of the airspace units and would not require an air-to-ground range.

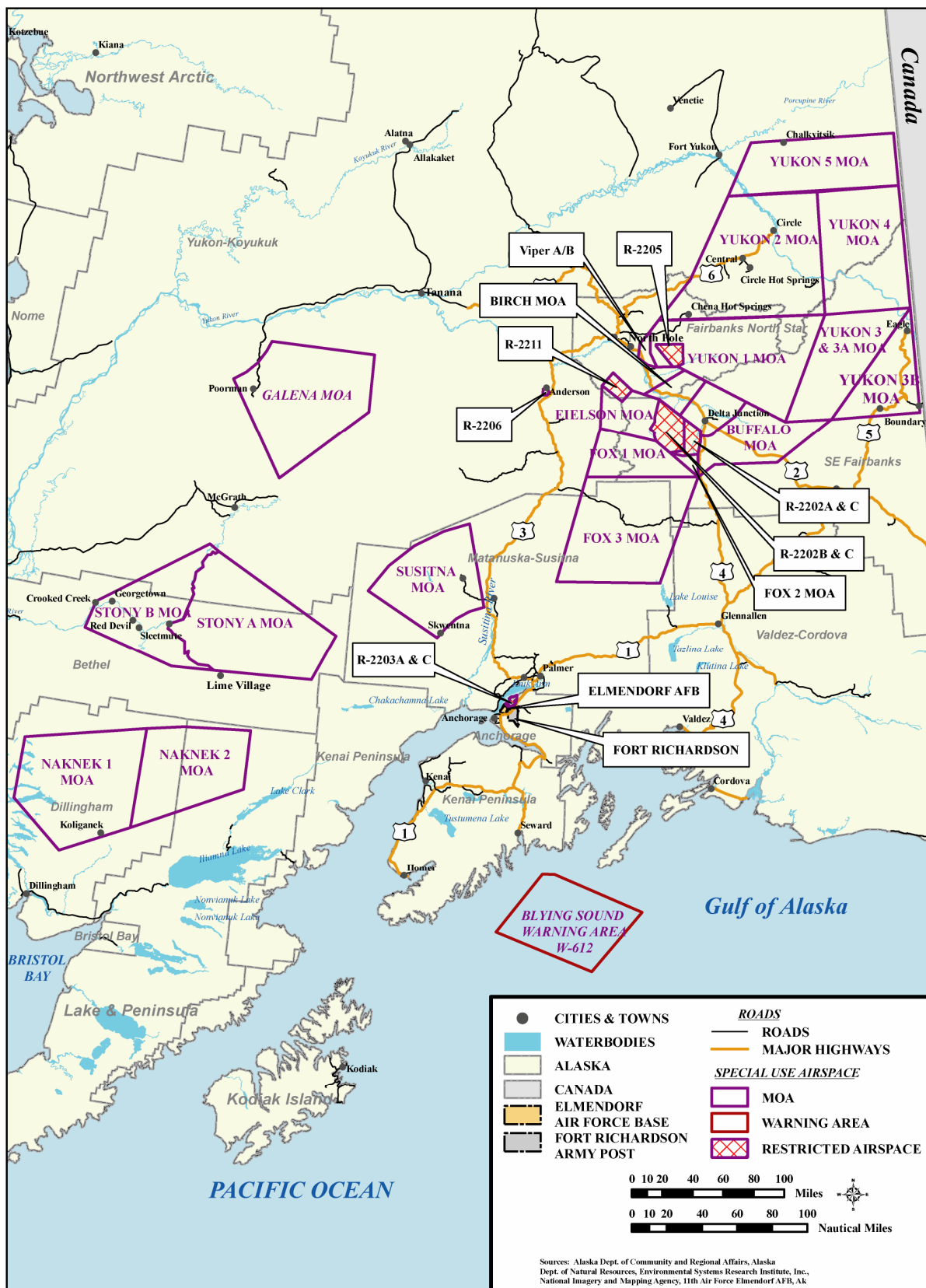


FIGURE 2.2-2. TRAINING SPECIAL USE AIRSPACE

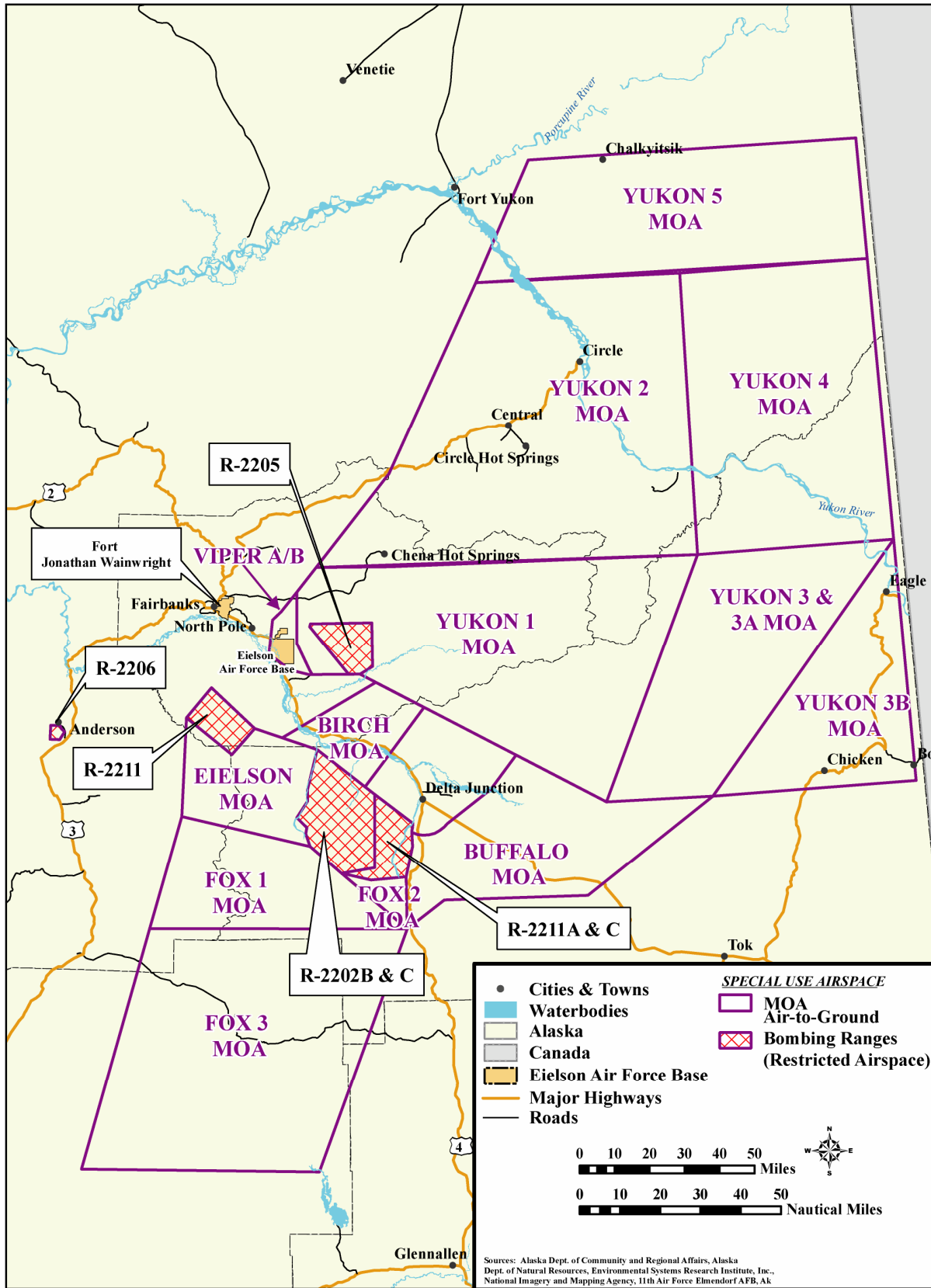


FIGURE 2.2-3. RESTRICTED AREAS AND AIR-TO-GROUND RANGES

**TABLE 2.2-4. BASELINE AND PROJECTED ANNUAL
SORTIE-OPERATIONS IN REGIONAL MOAS**

Airspace Unit	Floor (feet AGL)	Ceiling ¹ (feet MSL)	BASELINE USE				PROJECTED USE			
			F-15C ²	F-15E ³	Other	Total	F-15C ⁴	Other	F-22A ⁵	Total
Primary Airspace										
Galena ⁶	1,000	18,000	86	15	25	126	33	25	49	107
Naknek 1/2 ⁷	3,000	18,000	396	70	116	582	150	116	497	763
Stony A/B	100	18,000	3,380	599	986	4,965	1,270	986	1,646	3,902
Susitna	5,000 AGL or 10,000 MSL, whichever is higher	18,000	1,939	344	566	2,848	727	566	1,100	2,393
Secondary Airspace										
Birch	500	5,000	7	16	3,750	3,774	3	3,750	14	3,767
Buffalo	300	7,000	20	47	3,898	3,965	8	3,898	39	3,945
Eielson	100	18,000	81	185	6,029	6,295	30	6,029	153	6,212
Fox 1/2/3	5,000	18,000	294	672	5,351	6,317	110	5,351	555	6,016
Yukon 1	100	18,000	134	307	5,719	6,160	50	5,719	254	6,023
Yukon 2	100	18,000	106	244	4,907	5,257	40	4,907	201	5,148
Yukon 3 A/B ⁸	100	18,000	199	454	2,947	3,600	75	2,947	375	3,397
Yukon 4	100	18,000	114	260	3,317	3,691	45	3,317	215	3,577
Yukon 5 ⁹	5,000	18,000	69	157	1,943	2,169	25	1,943	130	2,098
Viper	500	18,000	0	0	6,151	6,151	0	6,151	0	6,151

Notes: 1. ATCAA overlies all MOAs except Buffalo and Birch MOAs.

2. Numbers in this column are for 2 F-15C squadrons.

3. Numbers in this column are for 1 F-15E squadron.

4. Numbers in this column are for 1 F-15C squadron.

5. Numbers in this column are for 2 F-22A squadrons (36 aircraft).

6. Not used for MFE.

7. ATCAA up to 31,000 MSL.

8. Consists of Yukon 3A (100 AGL-10,000 MSL); Yukon 3B (2,000 AGL-18,000 MSL).

9. Used for MFE only.

AGL = above ground level; MSL = mean sea level; ATCAA = Air Traffic Control Assigned Airspace;

MOA = Military Operations Area

TABLE 2.2-5. EXISTING F-15 AND PROPOSED F-22A MTRs USED FOR TRAINING

<i>MTR</i>	F-15E		F-22A	
	<i>Existing</i>	<i>Proposed</i>	<i>Existing</i>	<i>Proposed</i>
IR-900/IR-916	43	0	0	16
VR-1900/VR-1916	12	0	0	5
IR-919/IR-921	59	0	0	22
VR-937/VR-938	43	0	0	16
VR-935/VR-936	2	0	0	1

Sources: Air Force 2005a.

Department of Defense (DoD) 2004.

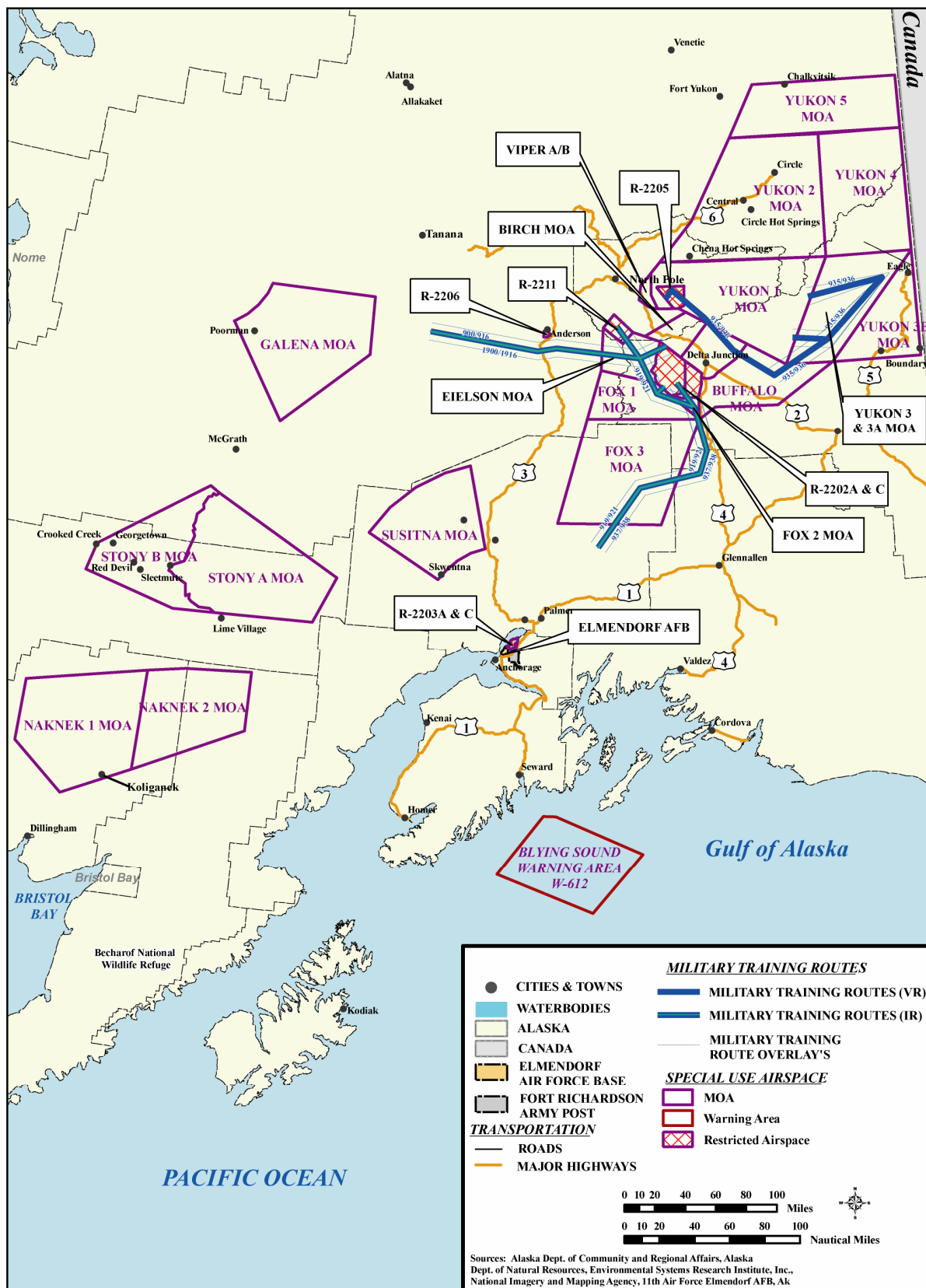


FIGURE 2.2-4. MTRs PROPOSED TO BE USED DURING F-22A TRAINING

Air-to-ground training also includes ordnance delivery training. Ranges currently used for F-15E training offer limited target capabilities. All ordnance delivery training would adhere to the requirements and restrictions of the ranges. Table 2.2-6 presents the current F-15E air-to-ground munitions used in training and the projected F-22A training munitions. Although several different types of smaller munitions are being studied for the F-22A, the primary air-to-ground ordnance carried by the F-22A will be the Guided Bomb Unit (GBU)-32 and a Small Diameter Bomb (SDB) (GBU-39/B). The GBU-32 is a 1,000 pound equivalent variant of the Joint Direct Attack Munition (JDAM). JDAMs are guided to the target by an attached Global Positioning System receiver. SDBs are guided 250 pound equivalent munitions. Training with these weapons in Alaskan airspace could include accelerating to launch speed, altitude, and delivery profile prior to opening the weapons bay. No live JDAMs or SDBs would be released in Alaskan MOAs.

TABLE 2.2-6. CURRENT AND PROJECTED ANNUAL AIR-TO-GROUND MUNITIONS

<i>Training Munition Class</i>	<i>F-15E</i>	<i>F-22A</i>
25 pound	590	0
250 pound	0	200
500 pound	57	0
1,000 pound	0	50
2,000+ pound	30	0

In combat, these weapons could be released by an F-22A at supersonic speeds at altitudes up to 50,000 feet MSL. Actual ordnance delivery training at approved delivery profiles would occur during the times when F-22A squadrons would be deployed to other locations during special training cycles. Locations where levels of munition training is authorized could include the Nellis Range Complex in Nevada, the Utah Test and Training Range, and the approved ranges associated with Eglin AFB. An estimated 170 annual missions (approximately 3 percent of total F-22A missions) would be flown by the F-22As at exercises and training away from Elmendorf AFB. A portion of these missions would involve ordnance delivery training. The negligible level of use of these remote ranges and the current level of use by others suggest that projected F-22A use does not warrant additional detailed environmental analysis for these ranges.

F-22A training with munitions comparable in size to a JDAM or an SDB could occur on approved Alaskan Ranges. F-22A flight profiles, altitudes, and speed would be restricted to ensure that such munitions meet approved range weapon safety footprints.

2.2.3 DEFENSIVE COUNTERMEASURES

Chaff and flares are the principal defensive countermeasures dispensed by military aircraft to avoid detection or attack by enemy air defense systems. Although the F-22A's stealth features reduce its detectability, pilots must still train to employ defensive countermeasures. F-22As would use R-170 chaff and MJU-10/B flares in approved Alaskan airspace. Defensive chaff and flares are used to keep aircraft from being successfully targeted by weapons such as surface-to-air missiles, anti-aircraft artillery, or other aircraft. Appendix A describes the characteristics of chaff and Appendix B describes the characteristics of flares used in defensive training.

Effective use of chaff and flares in combat requires frequent training by aircrews to master the timing of deployment and the capabilities of the defensive countermeasure, and by ground

crews to ensure safe and efficient handling of chaff and flares. Defensive countermeasures deployment in Elmendorf AFB authorized airspace is governed by a series of regulations based on safety, environmental considerations, and defensive countermeasures limitations. These regulations establish procedures governing the use of chaff and flares over ranges, other government-owned and controlled lands, and nongovernment-owned or controlled areas. Chaff and flares would continue to be used in the primary and secondary MOAs.

A bundle of chaff consists of approximately 0.5 to 5.6 million fibers, each thinner than a human hair, that are cut to reflect radar signals and, when dispensed from aircraft, form an electronic “cloud” that breaks the radar signal and temporarily hides the maneuvering aircraft from radar detection. The chaff fibers are dispersed and four or five plastic or mylar pieces fall to the ground. Chaff use is limited to a total of 90,000 pounds annually over all the airspace (Air Force 1997). The F-22A is proposed to use less than 6 percent of that annual amount.

Flares ejected from aircraft provide high-temperature heat sources that mislead heat-sensitive or heat-seeking targeting systems. Flares burn for 3 to 4 seconds at a temperature in excess of 2,000 degrees Fahrenheit to simulate a jet exhaust. During the burn, a flare descends approximately 400 feet. The burning magnesium pellet is completely consumed and four or five plastic pieces and aluminum-coated mylar wrapping material falls to the ground. Restrictions for flare use in Alaskan MOAs are described below.

- Flares may only be deployed above 5,000 feet AGL from June 1 through September 30 to reduce the potential for fires.
- For the remainder of the year, the minimum altitude for flare use is 2,000 feet AGL, well above the safety standards set by the DoD.

As described in Section 1.3.1, the F-22A is still undergoing weapons test and evaluation. The actual amounts of chaff and numbers of flares deployed during training will be developed as F-22A tactics are refined. The defensive countermeasure numbers presented in this section are comparable to those anticipated for F-15C and F-15E non-stealth aircraft.

Table 2.2-7 presents the existing and proposed chaff use by air superiority aircraft. The 18 F-15C and 36 F-22A aircraft would be expected to use approximately the same amount of chaff as the 42 F-15C and 18 F-15E currently deploy in approved training airspace.

**TABLE 2.2-7. EXISTING AND PROPOSED CHAFF USE
(ANNUALLY IN BUNDLES OF CHAFF)**

<i>Aircraft</i>	<i>Existing</i>	<i>Proposed</i>	<i>Change</i>
F-15C	24,408	11,623	-12,785
F-15E	10,461	0	-10,461
F-22A	0	23,246	+23,246
Total	34,869	34,869	0

Table 2.2-8 summarizes the existing F-15C and F-15E and proposed F-22A flare use. The F-22A would release up to 14,916 flares per year in the MOAs. This level-of-use would result in the same number of flares used by the departing F-15C and F-15E squadrons. The number of flares used in each MOA would be proportional to the number of sortie-operations conducted by the F-22As. Based on the emphasis on flight at higher altitudes for the F-22A, approximately 80

percent of F-22A flare release throughout the approved MOAs would occur above 10,000 feet AGL.

**TABLE 2.2-8. EXISTING AND PROPOSED FLARE USE
(ANNUALLY IN NUMBER OF FLARES)**

<i>Aircraft</i>	<i>Existing</i>	<i>Proposed</i>	<i>Change</i>
F-15C	14,919	7,104	-7,815
F-15E	6,394	0	-6,394
F-22A	0	14,209	+14,209
Total ¹	21,313	21,313	0

Note: 1. Includes 971 MJU-7 (T-1) flare simulators.

2.2.4 NO ACTION ALTERNATIVE WITHIN THE ALASKAN AIRSPACE

The No Action Alternative would not beddown two F-22A squadrons at Elmendorf AFB at this time. One F-15C squadron and one F-15E squadron have been identified as aircraft to be relocated as part of BRAC 2005. Eleventh Air Force mission requirements mean that No Action for the F-22A beddown could affect the schedule for BRAC action at Elmendorf AFB. No Action for this EA is equivalent to baseline use of SUA. Table 2.2-4, above, presents the airspace training associated with existing F-15C and F-15E squadrons. This airspace training would be expected to continue under No Action until the BRAC action was implemented.

2.3 IDENTIFICATION OF ALTERNATIVES

This section tiers from the alternative location identification process contained in the Initial F-22 (F-22A) Operational Wing Beddown Final Environmental Impact Statement (EIS) (Air Force 2001a). The process for identifying alternative bases for the Initial F-22A Operational Wing beddown considered operational requirements, environmental considerations, and input from public scoping. Although the F-22A program considered in the EIS had air superiority as its primary mission, the EIS also notes the air-to-ground missions, identifies air-to-ground munitions carried by the aircraft, and describes training with those munitions (Final EIS Section 2.1.2). The information in the Final EIS about F-22A air-to-ground missions was the best available at the time of the EIS.

THE F-22A, F-22, AND F/A-22 ARE DIFFERENT DESIGNATIONS THAT HAVE BEEN USED FOR THE SAME AIRCRAFT.

Subsequent to the Initial F-22 Operational Wing Beddown Final EIS, there has been improved understanding of the combined air-to-air and air-to-ground missions of the F-22A. This improved understanding continues to emphasize all aspects of air superiority (including both air-to-air and air-to-ground missions) and does not change the Operational Wing beddown criteria used in the EIS for identifying bases appropriately analyzed for an Operational Wing of the F-22A. Those criteria are summarized in Table 2.3-1.

**TABLE 2.3-1. SUMMARY OF SELECTION CRITERIA TO BEDDOWN
AN F-22A OPERATIONAL WING**

<i>Criteria</i>	<i>Explanation</i>
1. Air Force Base with an Existing F-15C Mission	The F-22A Operational Wing must be established at an Air Force base to maintain positive command and control and to ensure mission priority. Beddown of the F-22A at an F-15C base would result in the least disruption in operations and combat capability. In addition, the organizational structure, training regimes, mission planning capabilities, and support functions (e.g., weapons handling, security) at an F-15C base would already match those needed for an F-22A Operational Wing.
2. Established Support for Fighter Aircraft	An operational fighter wing needs a base already conformed and organized to support fighter aircraft. Requirements (e.g., infrastructure, organization) for fighter aircraft differ markedly from those for bombers, tankers, and transports. Fighter aircraft commonly generate more sorties, but have shorter duration missions. Maintenance and support crew organization and logistics must fit the tempo and nature of fighter operations.
3. Access to Airspace for Training	The base must have access to existing airspace of sufficient size and vertical dimensions to accommodate the breadth of training required for the air superiority mission, including multi-aircraft, air-to-air combat engagements, and supersonic flight. The airspace must be located within sufficient proximity to the base to support unrefueled F-22A training.
4. Support Varied Training Opportunities	Varied training must provide aircrews with the opportunity to encounter the wide range of situations that mirror combat as closely as possible. Such training requires the F-22A pilots to face and defeat threats from the air and the ground. Realism and quality in such situations involve a range of training activities including multi-aircraft engagements, identifying and targeting adversaries from long distances, and using the full capabilities of the F-22A. For defeating both air and ground threats, the ability to use chaff and flares as defensive countermeasures forms an important quality of the airspace.
5. Available Infrastructure	To maximize the efficiency of the F-22A beddown and to offer the ability to integrate the F-22A mission immediately, the base must provide adequate infrastructure. The existing infrastructure (e.g., fueling, runways) of a base must be designed and oriented around a fighter mission.
6. Existing Communications Links	Any base considered suitable for the beddown must have the existing communication capability to accommodate the requirements of an air dominance wing.

Source: Air Force 2001a.

2.3.1 REVIEW OF CANDIDATE BASING LOCATIONS

Forty-three Air Force bases were screened to six alternative bases in the Initial F-22 Operational Wing Beddown Final EIS. These six bases were considered candidate bases for the F-22A Second Operational Wing beddown. The current status of the six bases as potential alternatives for beddown of the Second Operational Wing of F-22A aircraft is reviewed below:

1. **Langley AFB.** Selected as the location for the Initial F-22A Operational Wing. Selected through BRAC 2005 to retain F-15C aircraft. Not a candidate location for the F-22A Second Operational Wing at this time.
2. **Eglin AFB.** Selected through BRAC 2005 as the location for all F-35 training by Air Force, Marine, and Navy pilots. Not a candidate location for the F-22A Second Operational Wing at this time.
3. **Elmendorf AFB.** Identified in BRAC 2005 as a base to lose one squadron of F-15C air superiority aircraft and one squadron of F-15E combined air-to-air and air-to-ground aircraft. The BRAC actions would create a mission void and concurrently create unused fighter beddown capacity at a location which meets all six beddown criteria. Continues to be a candidate for F-22A Second Operational Wing.
4. **Mountain Home AFB.** Identified in BRAC as the location for efficiently concentrating F-15E operational aircraft, including Elmendorf AFB F-15E aircraft. Beddown of F-15E aircraft will require construction and other changes at base over the next several years. Not a candidate for F-22A Second Operational Wing at this time.
5. **Nellis AFB.** An F-22A Force Development and Evaluation (FDE) squadron has been beddown and two squadrons of F-35 are scheduled to be beddown at Nellis AFB to support the Air Warfare Center, Air Force Weapons School, and other training, testing, and evaluation units. The unique functions served by Nellis AFB limit the ability to accommodate all facilities and operational requirements associated with the F-22A Second Operational Wing at this time.
6. **Tyndall AFB.** All F-22A advanced pilot training will be located at Tyndall AFB. The concentration of all F-22A advanced training aircraft with the F-22A Second Operational Wing would place all operational F-22A assets east of the Mississippi River and a substantial number of F-22A aircraft along the Gulf Coast. It would be operationally superior to not concentrate assets at this time and to have the F-22A second wing closer to the Pacific theater.

Elmendorf AFB is the only base which meets the original selection criteria for an Operational Wing beddown (Table 2.3-1), meets national needs for location, and has the capacity at this time to accommodate the Second F-22A Operational Wing. Elmendorf AFB is uniquely positioned to support the missions of the F-22A because, until the BRAC decision, Elmendorf AFB had both the Air Force air-superiority F-15C and air-to-ground F-15E missions. The F-22A would draw from that experience for its air-superiority role that includes both air-to-air and air-to-ground responsibilities. Elmendorf AFB command and control, other infrastructure and administrative capabilities, and training airspace are suited to the combined F-22A air superiority and air-to-ground capabilities.

2.3.2 ALTERNATIVES CARRIED FORWARD: FACILITY LOCATIONS ON ELMENDORF AFB

The three beddown options described in Sections 2.1.1 through 2.1.3 represent alternative configurations for bedding down the F-22A Wing at Elmendorf AFB. Each different facility has cost and command and control aspects. These three options have been identified as best able to meet the F-22A operational requirements without disrupting other operations at Elmendorf AFB. Option B combines efficiencies of facility construction and wing operation to make it the Air Force's preferred alternative.



OPERATIONAL PILOTS MUST CONTINUALLY TRAIN TO MAINTAIN SKILLS ESSENTIAL FOR COMBAT. EXISTING ALASKAN AIRSPACE WOULD MEET THE TRAINING NEEDS OF F-22A PILOTS BASED AT ELMENDORF AFB.

2.3.3 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

Thirty-five of 41 active Air Force bases (after BRAC 2005) do not have an operational air superiority (F-15C) squadron. Of the six remaining bases, Eglin AFB, Langley AFB, Mountain Home AFB, and Nellis AFB have been designated through BRAC or other Air Force planning to receive substantial additional Air Force assets in the immediate future (refer to Section 2.3.1). Therefore, they do not have the capacity to beddown an F-22A Operational Wing at this time. The fifth remaining base, Tyndall AFB, is not located with quick access to the Pacific Rim and would concentrate nearly one-half of the near-term advanced training and operational F-22A aircraft in one location. Therefore, placing the Second F-22A Operational Wing at Tyndall does not meet the current needs of the Air Force. The F-22A Second Operational Wing beddown would better serve national interests if it were located proximate to the Pacific Rim.

None of the above listed five bases was carried forward for consideration as the beddown location for the second F-22A Operational Wing.

One base, Elmendorf AFB, will have one existing F-15C squadron (after BRAC) and immediate recent experience with both F-15C air-superiority and F-15E air-to-ground operational squadrons. Elmendorf AFB is carried forward as the proposed location for the Second F-22A Operational Wing.

2.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

This EA for the Second F-22A Operational Wing beddown at Elmendorf AFB has been prepared in accordance with NEPA (42 United States Code [USC] 4321-4347), CEQ Regulations (40 CFR § 1500-1508), and 32 CFR 989, *et seq.*, *Environmental Impact Analysis Process* (Air Force Instruction [AFI] 32-7061). NEPA is the basic national requirement for identifying environmental consequences of federal decisions. NEPA ensures that environmental information is available to the public, agencies, and the decision-maker before decisions are made and before actions are taken.

2.4.1 ENVIRONMENTAL ASSESSMENT PROCESS

The environmental analysis process, in compliance with NEPA guidance, includes public and agency review of information pertinent to the Proposed Action including three beddown options, and provides a full and fair discussion of potential consequences to the natural and human environment. Community outreach/scoping meetings were conducted in Fairbanks, Alaska, from 20 through 22 October 2005 and in Anchorage, Alaska on 24 October 2005 to involve the public and agencies, to identify possible consequences of an action, and to focus analysis on environmental resources potentially affected by the Proposed Action or the No Action Alternative.

F-22A Beddown EA

Executive Summary

Chapter 1.0 Purpose and Need for Second F-22A Operational Wing Beddown

- 1.1 Background
- 1.2 Purpose of F-22A Operational Wing Beddown at Elmendorf AFB
- 1.3 Need for F-22A Operational Wing Beddown

Chapter 2.0 Description of Proposed Action and Alternatives

- 2.1 Elements Affecting Elmendorf AFB
- 2.2 Elements Affecting Alaskan Airspace
- 2.3 Identification of Alternatives
- 2.4 Environmental Impact Analysis Process
- 2.5 Regulatory Compliance
- 2.6 Environmental Comparison of the Proposed Action Options and No Action Alternative

Chapter 3.0 Elmendorf AFB Affected Environment and Consequences

- 3.1 Airspace Management and Air Traffic Control
- 3.2 Noise
- 3.3 Safety
- 3.4 Air Quality
- 3.5 Physical Resources
- 3.6 Biological Resources
- 3.7 Cultural Resources
- 3.8 Land Use and Transportation
- 3.9 Socioeconomics
- 3.10 Environmental Justice

Chapter 4.0 Training Special Use Airspace Affected Environment and Consequences

- 4.1 Airspace Management
- 4.2 Noise
- 4.3 Safety
- 4.4 Air Quality
- 4.5 Physical Resources
- 4.6 Biological Resources
- 4.7 Cultural Resources
- 4.8 Land Use and Recreation
- 4.9 Socioeconomics
- 4.10 Environmental Justice

Chapter 5.0 Cumulative Impacts

- 5.1 Cumulative Effects Analysis
- 5.2 Other Environmental Considerations

Chapter 6.0 References

Chapter 7.0 List of Preparers

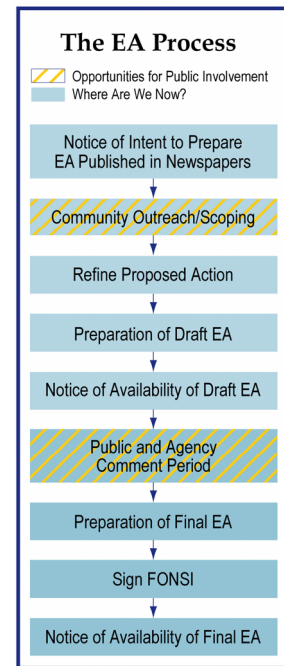
Appendices

Interagency and Intergovernmental Coordination for Environmental Planning letters were sent and responses received through January 2006. Community outreach and scoping handouts and Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) letters provided by the Air Force in late 2005 and early 2006 included information on 48 PAI as the Proposed Action. Since that time, the number of aircraft has been modified to 36 PAI.

2.4.2 EA ORGANIZATION

This EA is organized into the following chapters and appendices. Chapter 1.0 describes the purpose and need of the proposal to beddown the F-22A at Elmendorf AFB. A detailed description of the Proposed Action analyzing three beddown options and the No Action Alternative is provided in Chapter 2.0. Finally, Chapter 2.0 provides a comparative summary of the effects of the Proposed Action options and No Action Alternative with respect to the various environmental resources.

Chapter 3.0 describes both the existing conditions and potential consequences of the three facility locations options and the No Action Alternative at Elmendorf AFB. Chapter 4.0 describes the existing conditions and environmental consequences and the No Action Alternative within the proposed training SUA. A full range of applicable environmental resources is presented. Chapter 5.0 presents a cumulative analysis, considers the relationship between short-term uses and long-term productivity identified for the resources affected, and summarizes the irreversible and irretrievable commitment of resources if the Proposed Action were implemented. Chapter 6.0 contains references cited in the EA and lists



the individuals and organizations contacted during the preparation of the EA. A list of the document preparers is included in Chapter 7.0.

In addition to the main text, the following appendices are included in this document: Appendix A, Characteristics of Chaff; Appendix B, Characteristics and Analysis of Flares; Appendix C, Agency Coordination; Appendix D, Aircraft Noise Analysis and Airspace Operations; Appendix E, Review of Effects of Aircraft Noise, Chaff, and Flares on Biological Resources.

2.4.3 SCOPE OF RESOURCE ANALYSIS

The Proposed Action including three options have the potential to affect certain environmental resources. These potentially affected resources have been identified through public scoping meetings, communications with state and federal agencies and Alaska Natives, and review of past environmental documentation. Specific environmental resources with the potential for environmental consequences include airspace management and air traffic control (including airport traffic), noise, safety, air quality, physical resources, biological resources, cultural resources, land use (including recreation and transportation), socioeconomics, and environmental justice.

2.4.4 PUBLIC AND AGENCY INPUT

The Air Force initiated early public and agency involvement in the environmental analysis of the proposed beddown of the F-22A. The Air Force published newspaper advertisements, posted flyers, sent out press releases, and distributed Intergovernmental Coordination for Environmental Planning letters. These announcements solicited public and agency input on the proposal and invited the public and agencies to attend community outreach scoping meetings on the F-22A Beddown in Fairbanks and Anchorage, Alaska, October 20-22 and October 24, 2005, respectively. Table 2.4-1 presents details on the community outreach events.

TABLE 2.4-1. COMMUNITY OUTREACH SCOPING MEETINGS

<i>Publication</i>	<i>Meeting Date</i>	<i>Meeting Location</i>
Fairbanks Daily News-Miner, October 8, 2005	October 20 to 22, 2005 Daily 8:00 a.m. to 5:00 p.m.	F-22A booth at the Alaska Federation of Natives Conference, Carlson Center, 2010 2nd Avenue, Fairbanks, AK
Anchorage Daily News, October 9 and Sourdough Sentinel, October 14, 2005	October 24, 2005 4:00 to 7:00 p.m.	Public meeting at the Hilton Garden Inn Anchorage, 100 W. Tudor Road, Anchorage, AK

Table 2.4-2 presents issues identified by the public, Alaska Natives, and government entities during scoping for this EA. Table 2.4-3 summarizes public and Alaska Native comments received during the 30-day public and agency comment period. Column two provides a summary of the comment and column three provides the reader a reference to the page number and section in the EA where the response may be found.

**TABLE 2.4-2. SUMMARY OF PUBLIC COMMENTS AND NOTES FROM
SCOPING/COMMUNITY OUTREACH EVENTS
(PAGE 1 OF 3)**

<i>Fairbanks, Alaska: Thursday, 20 October 2005</i>
<ol style="list-style-type: none"> 1. Potential conflict with private aircraft using the same airspace in Naknek MOA. (See Sections 4.1 and 4.9) 2. Aircraft noise during recreational canoe trip in the Yukon Flats area. (See Section 4.2) 3. Is it possible to schedule flights to avoid high recreational use, such as weekends and holidays? (See Sections 4.8 and 4.9) 4. Is it possible to schedule flights to avoid hunting seasons? Training noise could affect caribou or other game. (See Section 4.6) 5. There are occasions where barges are not able to access the villages. Villagers must rely on subsistence hunting that occurs during the summer. (See Section 4.23) 6. What would be the effects of the A-10 or F-16 leaving on the Fairbanks economy? What would be the economic effects of cutting back Eielson AFB? Response: BRAC actions are independent of an F-22A beddown decision. 7. During hunting season, when hunters are flown in, there is a potential conflict with pilots in the air in Naknek MOA. (See Sections 4.2 and 4.8) 8. Participant enjoyed viewing fighter aircraft in the Stony airspace during hunting season. (See Section 4.1) 9. Why does the Air Force need to fly and train in the designated MOAs? (See Section 2.2) 10. What happens if an engine catches fire and stops operating? (See Sections 3.3 and 4.3) 11. How much time do the aircraft train at different altitudes? Do the noise levels change? (See Sections 2.2 and 4.2) 12. Does the Air Force use missiles during air-to-air training? (See Section 2.2) 13. How will noise affect hunting in Naknek and Stony MOAs? (See Section 4.7) 14. Will there be flare use? If so, how much? (See Section 2.2.3) 15. The map shows a road to Cordova, but the road does not go to Cordova. It does not go further than Chitina. (See Section 2.2.1) 16. Participant heard sonic booms on his trap line outside of Galena. He was not bothered by the noise, but in one instance, a friend was startled while he was skinning a moose and heard a sonic boom. (See Sections 4.2 and 4.7) 17. Some individuals west of the Eielson MOAs mentioned observing overflights (probably from aircraft on MTRs). Response: F-22A training aircraft will use MTRs less than the current F-15E use. 18. Will Galena or King Salmon remote airfields continue to be utilized by the Air Force? Response: Decisions on the use of these remote airfields is independent from an F-22A decision. 19. Will there be supersonic flight over migrating caribou or during calving season? How will overflights affect the Naknek MOA? (See Sections 4.2 and 4.6)

**TABLE 2.4-2. SUMMARY OF PUBLIC COMMENTS AND NOTES FROM
SCOPING/COMMUNITY OUTREACH EVENTS
(PAGE 2 OF 3)**

<p>20. Will the Air Force be visiting specific villages. Response: Scoping provided access to persons from throughout the state. Separate letters have been sent to villages to request information.</p> <p>21. What will happen to the Kulis Air Guard C-130s? Response: The F-22A decision is independent from a decision regarding Guard aircraft. For the purpose of this EA, moving the C-130s to Elmendorf is included in the noise, air quality, and cumulative analysis.</p> <p>22. The village of Chitina, a high concentration of people along the river, was not shown on the handout map. (See Section 4.7.2)</p>
<i>Fairbanks, Alaska: Friday, 21 October 2005</i>
<p>1. A resident from near Central hears jets, but not sonic booms. Will there be more noise? (See Section 4.2)</p> <p>2. A hunter believes the animals get used to the noise and adapt to it. (See Sections 3.6 and 4.6)</p> <p>3. People outside the airspace occasionally see a military aircraft fly by in both inland and coastal areas. Response: Military aircraft in transit, training on MTRs and supporting homeland security exercises could result in flights outside of special use airspace.</p> <p>4. Some individuals did not see their villages on the map, but could approximate where they lived. (See Section 4.7.2)</p> <p>5. People from the urban areas of Anchorage and Fairbanks heard noise from military aircraft using the base runways. (See Section 3.2)</p>
<i>Fairbanks, Alaska: Saturday, 22 October 2005</i>
<p>1. What is the number of military aircraft in Alaska now, and how will that change? Response: Air Force, Army, and other agencies have fixed and rotary wing aircraft based throughout Alaska. Mission changes and other decisions, such as BRAC, affect the number of military aircraft in Alaska at any given time.</p> <p>2. Will the number of aircraft flying in the airspace increase or decrease? (See Section 2.2)</p> <p>3. Are there going to be aircraft flying over recreational areas? If the Air Force agreed to avoid those areas, they should avoid them. (See Section 2.2)</p> <p>4. Lack of access due to the missile defense system facilities and missile launch requirements off of Kodiak Island limit access to the coastal villages. Response: The F-22A is not proposed to be involved in the missile defense system.</p> <p>5. Military aircraft often fly in areas outside the MOAs when they are not training. Response: Military aircraft in transit, training on MTRs and supporting homeland security exercises could result in flights outside of special use airspace.</p> <p>6. Several commentors noted their experience with an F-15 crash near Galena. (See Section 4.3)</p> <p>7. An individual who lives in Fox, near Fairbanks, does not hear noise from jets very often. (See Section 4.2)</p>

**TABLE 2.4-2. SUMMARY OF PUBLIC COMMENTS AND NOTES FROM
SCOPING/COMMUNITY OUTREACH EVENTS
(PAGE 3 OF 3)**

8. One individual noted an airspace conflict between one military aircraft and a spotter aircraft utilized to track herring fisheries. Response: F-22A use of off-shore Warning Areas would be negligible.
<i>Anchorage, Alaska: Monday, 24 October 2005</i>
1. An individual inquired where construction at Elmendorf AFB would be occurring and what the proposal entailed. (See Section 2.1)
2. An attendee expressed appreciation for the open and attentive community outreach event. (See Section 2.4)

**TABLE 2.4-3. ELMENDORF F-22A BEDDOWN DRAFT EA PUBLIC COMMENTS
(PAGE 1 OF 7)**

<i>Resource</i>	<i>Summarized Comment</i>	<i>EA Section and Response to Comments</i>
Preferred Alternative	We concur that Option B appears to be the most appropriate construction plan when considering cost, environmental and socio-economic impacts, and facility requirements.	Appreciate the comment. Option B is the Air Force's preferred alternative.
General	The graphic lists some 3 WG flying squadron patches. To be accurate, I believe the wing still has two other flying squadrons.	<i>Refer to Chapter 1.0</i> , page 1-10. <i>Response:</i> Additional squadron patches were added.
Description of Proposed Action and Alternatives	ATCAAs are not charted by the FAA and are managed by letter of agreement with the ATC controlling facility. They are above 18,000 feet MSL and are generally not associated in NEPA environmental analysis because all (military and civilian) subsonic aviation activity above 18,000 feet MSL is regarded as having minimal effect on the environment (especially not "significant" which would require an EIS).	<i>See Section 2.2</i> , page 2-15. <i>Response:</i> NEPA is required for the beddown of the F-22A which includes training airspace.
Airspace	You make repeated references to "effects" on general aviation as if they are "environmental." This would be true if you listed them with economic impact, by placing a "burden on the public," for example, by restricting IFR traffic from access to MOAs. I believe the impact you are implying is on "aviation safety" and should be discussed in that section.	<i>Response:</i> Airspace used by general aviation has been defined as an environmental resource by the courts.
Airspace	MOAs are charted by the FAA and scheduled use and real time use can be obtained from the scheduling agency, any regional FAA Flight Service Station, or the ATC controlling facility.	<i>See Section 2.2</i> , page 2-15.
Airspace	Training while operating under VFR does not afford Air Force crews any special rights or privileges above what is required by any other pilot flying in the National Airspace System; they must comply with VFR just like every other pilot.	<i>EA Text Change:</i> Page 4-1, Section 4.1.1. Inserted at end of second paragraph: Elmendorf aircrews fly under FAA rules when not training in SUA.
Airspace	The training airspace in Alaska is managed "regionally" by the 11 th Air Force Commander.	<i>See Section 2.2</i> , page 2-15. <i>EA Text Change:</i> Page 4-2, Section 4.1.2, second new sentence reads: Alaskan SUA is managed by the 11 th Air Force Commander.
Airspace	Commentor suggested that in Table 4.1-1 the hours published are those normally scheduled. The hours of use for almost all the airspace listed implies that training is not accomplished outside those times. FAA Order 7400.8 allows for most of them to be from 0700L to 2200L. No information source is listed at the bottom like that listed for Table 4.1-2.	<i>EA Text Change:</i> Page 4-3, Section 4.1.2.2, Table 4.1-1, Note 1, second sentence to read: All times are local times as normally scheduled. Added Source: FAA 2000.

**TABLE 2.4-3. ELMENDORF F-22A BEDDOWN DRAFT EA PUBLIC COMMENTS
(PAGE 2 OF 7)**

<i>Resource</i>	<i>Summarized Comment</i>	<i>EA Section and Response to Comments</i>
Airspace	A commentor suggested that in Section 4.1.2.3 it should be added that MTR schedules are given to local Flight Service Stations and that pilots can get scheduling information from them.	EA Text Change: Page 4-4, Section 4.1.2.3, first paragraph to end with sentence: No changes to MTRs are proposed as part of the F-22A beddown.
Airspace	One commentor had several comments related to the Restricted Airspace in Section 4.1.2.4 and suggested that the document mention that R-2202, R-2205, and R-2203 are owned and managed by the Army and used by the Air Force; only R-2211 is Air Force-owned and managed; no one flies in R-2206; and according to FAA Order 7400.8M "C" is between 10,000 and 31,000 and D is above 31,000.	EA Text Change: Page 4-4, Section 4.1.2.4, second to last sentence to read: The restricted airspaces, R-2202, R-2203, and R-2205, are Army ranges used by the Air Force for training. R-2206 is not a flying range. R-2211 is Air Force-owned and managed airspace to support training activities. R-2202C is between 10,000 and 29,000 feet MSL and R-2202D is 31,000 feet MSL to unlimited.
Airspace	An individual inquired about the hours of operation included in Table 4.1-2.	EA Text Change: Page 4-5, Section 4.1.2.3, Table 4.1-2, Note 2, second sentence to read: All times are local times as normally scheduled.
Airspace	Commentor suggested not including Restricted Airspace R-2206 because it is used for flight safety rather than aircraft training.	EA Text Change: Page 4-6, Section 4.1.2.4, Table 4.1-3: Note 3 (next to R-2206) replaced with Note 4. Not used for aircraft training.
Airspace	In Section 4.1.3.1, what does impact on airspace management have to do with environmental consequences?	EA Text Change: Page 4-6, Section 4.1.3.1, third paragraph. Change last sentence to read: With regard to airspace management, the Proposed Action would not require any changes to how the airspace is currently managed. The mitigation measures in the 1995 MOA EIS ROD continue to apply (Air Force 1995).
Noise	Mention the Human Use Study.	EA Text Change: Page 4-7, Section 4.1.3.1, add to end of paragraph before Alaska Native Concerns. A series of studies were conducted as part of the MOA EIS. Dissemination of information was found to be an important element in explaining airspace management and use. For example, information boards along the Chena River in the state recreation area explain military aircraft training use of the overlying airspace.
Airspace, Safety	The mission of any pilot is to accomplish the mission but conduct each flight safely. Each flight comes with inherent risks. The Air Force mission has more risk due to the nature of the aircraft and mission being flown. Suggest rewording see and avoid procedures in Alaska Native Concern paragraphs.	EA Text Change: Page 4-7, Section 4.1.3.1, Alaska Native Concerns. Last two sentences to read: These FAA rules require that all pilots are equally responsible to apply "see and avoid" techniques when operating an aircraft. As noted during scoping meetings, enhanced F-22A electronics and situational awareness are projected to reduce risks of conflicts with general aviation.

**TABLE 2.4-3. ELMENDORF F-22A BEDDOWN DRAFT EA PUBLIC COMMENTS
(PAGE 3 OF 7)**

<i>Resource</i>	<i>Summarized Comment</i>	<i>EA Section and Response to Comments</i>
Airspace	A commentator referred to Section 4.1.3.1, second paragraph, last sentence and stated, "I disagree, I believe that reduction in Air Force training (which is not separated from General Aviation) will benefit General Aviation and everyone involved as it relates to Aviation Safety. If the MTR use rate is cut by 50%, the risk of a mid-air mishap is cut by 50%. Since this relates to MTR activity, the FAA does not remove MTRs from public access. So the <i>benefit</i> as you say is significant, as the mishap potential is cut by 50%".	Response: Reduced use recognized as a benefit in EA.
Noise	Supersonic operations are not allowed in Birch, Buffalo, Yukon 3A Low, and Naknek MOAs.	See Section 4.2.2.2 , page 4-10. Columns specify "MOA/ATCAA"
Safety	Mention existing programs and guidance the Air Force uses to mitigate the mid-air potential risks.	EA Text Change: Page 4-14, Section 4.3.1, second sentence to read: Elmendorf AFB has existing programs and guidance to support safe operations and reduce risks associated with training in Alaskan airspace (Air Force 1995; Elmendorf AFB 2003; 3 rd Wing [3 WG] 2004).
Safety	A commentator suggested that the MOA mishap rate logic used in the EA may be faulty. The commentator goes on...assuming that Air Force mishap rates are smooth for the different phases of flight. In other words, your logic is OK if an equal amount of mishaps occur while training as they do during takeoff, enroute and returning from the airspace or during landing. I am guessing that your prediction is low – that more mishaps occur during takeoff and landing and not so many during actual training.	See Section 4.3.2.1 , Page 4-15, first paragraph. This notes that mishaps occur more frequently around airfields. The analysis is representative of the level included in environmental documents.
Safety	Your discussion of the Air Force's mitigation of mid-air collision potential (during hunting season) is incomplete. I submit that you need to factor in the mid-air collision potential with general aviation aircraft, and since they will reduce Air Force exposure due to F-15E removal, the overall safety picture will be better as the risk of mid-air potential will be reduced. Also note W-612.	EA Text Changes: Page 4-15, Section 4.3.2.1, new fourth paragraph to read: As noted in Section 2.2.2.1, MTR use by F-22A aircraft is projected to be less than 40 percent of existing F-15E usage. This lower use could minimally reduce any risks of low altitude accidents. Page 4-16, Table 4.3-1, Note 1 to read: W-612 is an offshore warning area not included in the mishap analysis because it is not scheduled for regular F-22A training.

**TABLE 2.4-3. ELMENDORF F-22A BEDDOWN DRAFT EA PUBLIC COMMENTS
(PAGE 4 OF 7)**

<i>Resource</i>	<i>Summarized Comment</i>	<i>EA Section and Response to Comments</i>
Physical Resources/ Biological Resources	Suggest inclusion of W-612 and the MTRs throughout EA.	<p>EA Text Change: Page 4-25, Section 4.5.2, last paragraph after "...Dillingham (Air Force 1995)": The offshore warning area W-612 is presented on Figure 1.1-2. W-612 is not scheduled for normal F-22A training. MTRs presented in Figure 2.2-4 are expected to be used by F-22A aircraft less than 40 percent of the time they are currently used by F-15E aircraft. Physical Resources under these MTRs are comparable to those under nearby MOAs.</p> <p>EA Text Change: Page 4-26, Section 4.6.2, first sentence to read: Existing training airspace used by Elmendorf AFB occurs primarily in MOAs and ATCAAs which overlie approximately 38.5 million acres.</p> <p>New last sentence added to same paragraph to read: W-612 is not planned for substantial F-22A training and MTR training would be reduced to 40 percent of current use. For these reasons, the focus of this analysis is the SUA proposed for F-22A training.</p>
Biological Resources	Is "Special Status" a biological term used by biologists? Who determines what species receive this designation?	EA Text Change: Page 4-26, Section 4.6.2, first sentence under Special-Status Species to read: Special-Status Species include species designated as threatened, endangered, or candidate species by state or federal agencies.
Biological Resources	A commentator suggested that in Section 4.6.3 Harrington and Veitch were critiqued for not necessarily being able to conclude that actual low flights were really anywhere near caribou. The commentator went on to add, their old study should not be referenced when we have much more recent data relating specifically to actual animals located within this airspace (not Eastern Canada).	EA Text Change: Page 4-28, Section 4.6.3, last sentence in third paragraph, add after "Labrador": Eastern Canada, where military training flights occur over 100 feet AGL. Over 98 percent of F-22A training flights would be above 2,000 feet (See Section 2.2).
Biological Resources	How was the conclusion made in Section 4.6.3 that animals are "likely habituated?"	EA Text Change: Page 4-29, Section 4.6.3, first paragraph, add reference to end of paragraph: (Refer to Appendix E.)
Cultural Resources	A commentator pointed out that prior to Figure 4.7-1, the EA did not mention the Native Corporations anywhere in the preceding text (existing conditions). The commentator suggested that the mention of them in this figure implied that they are given some type of status similar to Federally Recognized Tribes.	EA Text Change: Page 4-33, Section 4.7.3, Traditional Cultural Properties and Alaska Natives Concerns Subsection, add new sentence after Figure 4.7-1 callout. Sentence to read: The figure also includes the boundaries of the private Native Alaska regional corporations. This EA analysis considers the Alaska Native villages and their local economies based primarily on subsistence hunting.

**TABLE 2.4-3. ELMENDORF F-22A BEDDOWN DRAFT EA PUBLIC COMMENTS
(PAGE 5 OF 7)**

<i>Resource</i>	<i>Summarized Comment</i>	<i>EA Section and Response to Comments</i>
Noise/ Alaska Native Concerns/ Public Involvement	It states that the increase in sonic booms have the potential to disturb some Alaska Native users of land, but would not be expected to affect subsistence hunting. The Stony MOA covers a large area that includes several Alaska Native Villages along the Kuskokwim River including: Lime Village, Stony River, Sleetmute, Georgetown, Red Devil and others. Have surveys been completed to determine if the existing level of sonic booms can be heard in these communities and what the impacts of increased noise will have?	<i>See the following Sections</i> – Section 2.2, Table 2.2-2; Section 4.6; Section 4.7; Section 4.9; and Section 4.10. <i>EA Text Change:</i> (on page 4-33) after: “During scoping, Alaska Natives expressed concern that existing and projected noise levels and sonic booms could affect game in traditional hunting areas and potentially impact the local economy dependent on these resources.” Insert the following: During meetings held at Lime Village and Sleetmute under the Stony MOA for the Initial F-22 Beddown (Air Force 2001), Alaska Natives involved with subsistence hunting did not see noise as impacting game species (Air Force 2001a).
Cultural Resources	You have identified a potential “affect” in the Stony MOA and it is your responsibility to consult, in a meaningful manner, with these villages.	<i>Response:</i> During the Initial F-22 Operational Wing Beddown EIS, the Air Force held scoping meetings and later public hearings at eight Alaska Native Villages under the airspace (Air Force 2001). Meeting attendees commented that they could hear sonic booms but were not bothered by them; also that game animals appeared to be unaffected by the noise. As described in this EA, based on responses to the Initial F-22 Operational Wing Beddown EIS (Air Force 2001), the Air Force held scoping meetings for this EA in Fairbanks and Anchorage. The Air Force sent meeting notices for the October 2005 meetings, to Alaska Native Villages, as well as copies of this Draft EA. As outlined in the EA, the Air Force has established procedures for noise complaints or damage complaints associated with sonic booms that begin with contacting the Elmendorf AFB Public Affairs Office at 907-552-5756. The Air Force also conducts monthly meetings (11AF Airspace and Ranges Committee) to provide a forum for discussing environmental questions and issues related to airspace. Any comments and complaints that are received by the Elmendorf Public Affairs Office are discussed for resolution during the meeting.

**TABLE 2.4-3. ELMENDORF F-22A BEDDOWN DRAFT EA PUBLIC COMMENTS
(PAGE 6 OF 7)**

<i>Resource</i>	<i>Summarized Comment</i>	<i>EA Section and Response to Comments</i>
Land Use	In Land Use Alaska Natives is defined as one group of land owners. The Native Corporations are private entities and should be listed as "Private." Federal lands are also managed by the National Park Service. The State of Alaska land within the context of this study is likely managed by either the Departments of Fish and Game (ADFG) or Natural Resources (DNR). You also need to mention that while the land is managed by certain entities, the FAA has jurisdiction over the airspace above this land and is responsible for airspace use.	<p>EA Text Change: Page 4-35, Section 4.8.1, first paragraph, third sentence to read: Land ownership is a categorization of land according to type of owner. The major land ownership categories include state, federal, Alaska Native corporations, and other private landowners. Federal lands are described by the managing agency, which may include the USWFS, the U.S. Forest Service, BLM, or DOD. State of Alaska land under the study area is typically managed by the Departments of Fish and Game or Natural Resources. The land management plans include those documents prepared by agencies to establish appropriate goals for future use and development. As part of this process, sensitive land use areas are often identified by agencies as being worthy of more rigorous management. As noted in Section 4.1.1, FAA administers all navigable airspace above public and private lands.</p> <p>Add following sentence to end of second paragraph: As part of the mitigations identified in the MOA EIS ROD, the Air Force participates in the Resource Protection Council to work with agencies, Alaska Natives, and others in the identification and mitigation of potential consequences to environmental resources (Air Force 1995).</p>
Land Use	In the Land Use section, the term "Special Use Areas" is used and is given some type of special categorization. Where did you get the term? Is it a term used in NEPA documents? Special use according to your definition is given to private land?	<p>EA Text Change: Page 4-35, Section 4.8.2, second paragraph to read: Special use areas provide recreational activities (trails and parks), hunting, fishing, and/or solitude or wilderness experience (parks, forests, and wilderness areas). Table 4.8-1 identifies special use areas under the airspace units. Figures 4.8-1 and 4.8-2 present these special use areas under or near training airspace. For the purpose of this EA, Alaska Native regional corporation private lands and village statistical areas are included with recreational areas. This broad grouping of special use areas includes large public land areas such as state or national parks, forests, and reserves which may include individual campgrounds, trails, and visitor centers. This broad definition of special use areas also includes large private land areas under the airspace.</p>

**TABLE 2.4-3. ELMENDORF F-22A BEDDOWN DRAFT EA PUBLIC COMMENTS
(PAGE 7 OF 7)**

<i>Resource</i>	<i>Summarized Comment</i>	<i>EA Section and Response to Comments</i>
Noise	How many noise complaints does the Air Force receive due to sonic booms in the MOAs? I wonder if the actual record accurately substantiates predictions made by previous studies?	Response: Refer to Appendix E for information on the BOOMAP model. The model is based on extensive research at Nellis and Barry M. Goldwater ranges where monitors on the ground measuring the booms were correlated with aircraft speeds and locations being tracked as they maneuvered. The number of supersonic events that reached the ground became the basis of the internationally accepted model. Additional studies have been conducted to ascertain the degree of a population's annoyance with different annual average levels of noise and with the correlation of those levels with supersonic noise. These models are all based on multiple studies conducted over the past 30 years.

2.5 REGULATORY COMPLIANCE

This EA has been prepared to satisfy the requirements of NEPA (Public Law [P.L.] 91-190, 42 USC 4321 *et seq.*) as amended in 1975 by P.L. 94-52 and P.L. 94-83. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions. In addition, this document was prepared in accordance with Section 102 (2) of NEPA, regulations established by the CEQ (40 CFR 1500-1508), and AFI 32-7061 (i.e., 32 CFR Part 989).

Certain areas of federal legislation, such as the Endangered Species Act (ESA) and National Historic Preservation Act (NHPA), have been given special consideration in this EA. Implementation of the proposed beddown at Elmendorf AFB would require various federal and state reviews and permits.

Implementation of the Proposed Action through any of the three facility construction options would involve coordination with several organizations and agencies. Compliance with the ESA requires communication with the U.S. Fish and Wildlife Service (USFWS) in cases where a federal action could affect listed threatened or endangered species, species proposed for listing, or candidates for listing. The primary focus of this consultation is to request a determination of whether any of these species occur in the proposal area. If any of these species is present, a determination is made of any potential adverse effects on the species. Should no species protected by the ESA be affected by the Proposed Action, no additional action is required. Letters were sent to the appropriate USFWS and National Marine Fisheries Service offices as well as state agencies, informing them of the proposal and requesting data regarding applicable protected species. The USFWS replied that there are no federally listed or proposed species and/or designated or proposed critical habitat within the action area of the proposed project; therefore, no further action is required regarding ESA. The National Marine Fisheries Service replied that the Proposed Action will not result in any adverse effect to Essential Fish Habitat; therefore, no further consultation is necessary. Appendix C includes copies of relevant coordination letters sent by the Air Force.

The preservation of Alaska Native cultural resources is coordinated by the State Historic Preservation Office (SHPO), as mandated by the NHPA and its implementing regulations. Letters were sent to potentially affected Alaska Native communities informing them of the proposal (Appendix C). Further communication is included as part of this EA review process.

Elmendorf AFB is in attainment for all criteria pollutants and therefore an Air Conformity Review under the Clean Air Act (CAA) Amendments is not required as emissions for air pollutants is below the de minimis threshold. Elmendorf AFB will work with the Alaska Department of Environmental Conservation to prepare a permit to construct and operate new stationary sources.

Elmendorf AFB will prepare a pollution discharge elimination system permit and a construction Storm Water Pollution Prevention Plan (SWPPP).

2.6 ENVIRONMENTAL COMPARISON OF THE PROPOSED ACTION OPTIONS AND NO ACTION ALTERNATIVE

The following tables compare the environmental consequences by resource of the proposed F-22A beddown at Elmendorf AFB. Table 2.6-1 summarizes the consequences at Elmendorf AFB of implementing the Proposed Action through Option A, B, or C, and includes the No Action Alternative. This summary is derived from the detailed analyses presented in Chapter 3.0. Table 2.6-2 summarizes the environmental consequences for the proposed training SUA and the No Action Alternative, which are analyzed in detail in Chapter 4.0. Chapter 5.0 addresses cumulative consequences and finds that there are no significant cumulative environmental consequences resulting from an F-22A decision when added to other past, present, or reasonably foreseeable future federal and non-federal actions.



THE PROPOSED ACTION IS TO BEDDOWN THE SECOND F-22A OPERATIONAL WING AT ELMENDORF AFB.

**TABLE 2.6-1. SUMMARY OF IMPACTS BY RESOURCE AT ELMENDORF AFB
(PAGE 1 OF 3)**

	<i>Option A</i>	<i>Option B</i>	<i>Option C</i>	<i>No Action</i>
Airspace Management and Air Traffic Control	Anchorage Alaska Terminal Area (AATA) management of airspace would not be impacted by F-22A sorties.	Same as Option A.	Same as Option A.	Continued coordination with Federal Aviation Administration (FAA) to support civil aviation.
Noise	F-22A engines are more powerful and louder than F-15C or F-15E engines. The ability of the F-22A to take off without afterburners most of the time and the F-22As more rapid climb to altitude reduce the potential for off base noise generation. Northern portions of Elmendorf AFB will experience increased noise levels. Western portions of Fort Richardson would have decreased exposure. Off base areas expected to be within the 65 decibels (dB) noise contour are a portion of the Knik Arm, Port MacKenzie area, and part of the Port of Anchorage. These increased noise areas are not projected to impact human or natural resources in the areas. Construction noise will be temporary and have no long-term effect.	Aircraft operational noise would be the same as described under Option A. Construction noise would occur in two separate areas, but would be temporary and would not have any long-term effects.	Aircraft operational noise would be the same as described under Option A. Construction noise would occur in three separate areas, but would be temporary and would not have any long-term effects.	There would be no change in aircraft and no construction associated with F-22A aircraft beddown. Noise contours and conditions would remain the same as baseline conditions.
Safety	No change in off base safety conditions or in Bird-Aircraft Strike Hazard (BASH), munitions, or personnel safety. Removes fighter aircraft from parking in Elmendorf clear zones.	Same as Option A.	Same as Option A except some F-22As would park in Elmendorf clear zones.	Continuation of current safety conditions. F-15Cs would continue to park in clear zone.

**TABLE 2.6-1. SUMMARY OF IMPACTS BY RESOURCE AT ELMENDORF AFB
(PAGE 2 OF 3)**

	<i>Option A</i>	<i>Option B</i>	<i>Option C</i>	<i>No Action</i>
Air Quality	Construction emissions would produce localized, short-term elevated air pollutant concentrations. 191.5 tons of nitrogen oxides (NO _x) and 14.9 tons of particulate matter less than or equal to 10 micrometers in diameter (PM ₁₀) are projected to be generated over the 4 year construction period. This localized elevation would be short-term and would not be expected to adversely impact air quality or visibility. Operational emissions are expected to be reduced due to new, more efficient equipment with improved pollution control. Aircraft emissions are projected to be minimally higher, but improved efficiency and reduced on-site aircraft maintenance should result in no change in air quality within the Anchorage area.	Operational and aircraft emissions expected to be the same as Option A. Construction emissions projected to include 156.5 tons of NO _x and 12.2 tons of PM ₁₀ over the 4 year construction period. This localized elevation would be short-term and would not be expected to adversely impact air quality or visibility.	Same as Option A except 186 tons of NO _x and 14.3 tons of PM ₁₀ .	No new construction and no change from current emissions.
Physical Resources	50 acres of soil disturbance in one area. No significant effect on earth or water resources, hazardous materials, hazardous wastes, or the Environmental Restoration Program (ERP). New hazardous materials associated with aircraft coatings to be handled in new maintenance facility.	A total of 40 acres of soil disturbance in two locations. Effects essentially same as Option A.	A total of 30 acres of soil disturbance in three locations. Effects essentially same as Option A.	No ground disturbing activities. Hazardous wastes would be generated at current levels.
Biological Resources	Up to 30 acres of a 50 to 60 year old second growth forest could be lost. Migratory songbirds, including two special-status species, could occur in this forest stand. Clearing this marginal habitat during breeding season could disrupt some nesting birds. Fugitive dust and soil erosion, and hazardous materials associated with F-22A stealth coatings would be controlled to protect water resources. Noise would not be expected to adversely affect beluga whales in the Knik Arm.	Same as Option A except that up to 20 acres of a 50 to 60 year old second growth forest could be lost.	Same as Option A except that up to 10 acres of a 50 to 60 year old second growth forest could be lost.	No construction activities would occur with the potential to impact biological resources.

**TABLE 2.6-1. SUMMARY OF IMPACTS BY RESOURCE AT ELMENDORF AFB
(PAGE 3 OF 3)**

	<i>Option A</i>	<i>Option B</i>	<i>Option C</i>	<i>No Action</i>
Cultural Resources	Two structures scheduled for demolition and one for renovation would be evaluated for potential eligibility as National Register of Historic Places (NRHP). As defined in the Integrated Cultural Resources Management Plan, State Historic Preservation Officer (SHPO) consultation would be performed on potentially eligible structures scheduled for demolition or exterior renovation. Unknown subsurface archaeological resources could be impacted by ground disturbing activities; Integrated Cultural Resources Management Plan guidelines would be followed.	Same as Option A except two structures scheduled for demolition and two for renovation would be evaluated for potential NRHP eligibility. SHPO consultation would be performed as described for Option A.	Same as Option B except that, in addition to the structures noted in Option B, Option C renovates two hangars in the Flightline Historic District. Any exterior renovation to these structures would require SHPO consultation.	No change to known or unknown cultural resources.
Land Use/ Transportation/ Recreation	Some extension of the 65 dB noise contour on the north portion of the base, over the Knik Arm, and over compatible land uses in the Port MacKenzie and Port of Anchorage areas. The west portion of Fort Richardson would have decreased noise levels. Short-term traffic congestion due to construction. Long-term slight reduction in traffic due to slight decrease in base personnel.	Same as Option A.	Same as Option A, except that project elements in variation from the Base General Plan.	No change to the noise environment on the base and nearby environs. No construction or personnel changes. No impact to traffic due to construction
Socioeconomics	\$402 million construction cost. 1,904 temporary construction jobs. Personnel reduction of 669 positions or a 7.9 percent decrease in base employment. Secondary reduction of approximately 223 off base positions. Changes in employment not expected to be noticed in the dynamic Anchorage community.	Same as Option A except \$323 million construction cost. 1,526 temporary construction jobs.	Same as Option A except \$325 million construction cost. 1,536 temporary construction jobs.	No construction cost or benefits of temporary construction jobs. No F-22A induced change in base personnel.
Environmental Justice	The 65 dB noise contour does not extend off base into incompatible residential areas. No disproportionate impact upon minority or low-income populations or upon children.	Same as Option A.	Same as Option A.	No change to disadvantaged populations or children.

**TABLE 2.6-2. SUMMARY OF IMPACTS BY RESOURCE FOR
TRAINING SPECIAL USE AIRSPACE
(PAGE 1 OF 2)**

	<i>Proposed Action Options</i>	<i>No Action</i>
Airspace Management and Air Traffic Control	No change in airspace management. F-22A aircraft typically fly at higher altitudes in Military Operations Areas (MOAs) and Air Traffic Control Assigned Airspaces (ATCAAs) and reduced training on Military Training Routes (MTRs) when compared with the F-15C or F-15E. This could minimally reduce the number of low level military aircraft at altitudes where the majority of general aviation activity occurs.	No change in airspace management or use. Continued F-15E traffic on MTRs.
Noise	No difference in subsonic noise from current conditions in MOAs. Minimally reduced noise on MTRs. Noticeable increase in sonic booms in Stony A/B from an existing 15 to an estimated 28 per month. Other MOAs increase by 1 to 4 per month from the existing 1 to 19 per month. Noise levels would increase by 1 to 3 CDNL (C-Weighted Day-Night Sound Level) in Yukon, Stony, and Fox MOAs and by 11.5 CDNL (from 33.6 to 45.1) under Naknek MOA. Sonic booms would not pose a health or other risk, but could increase annoyance.	Continuation of current noise levels from subsonic and supersonic flight. No increase in sonic booms in Stony, Fox, or Yukon MOAs.
Safety	No substantive change in or impacts to flight, ground, or other safety aspects. Reduced low-level flight by F-22A as compared with F-15E could minimally reduce military aircraft presence at general aviation altitudes. Improved situational awareness with F-22A systems facilitate see-and-avoid procedures. No safety impacts from chaff and flare use. Overall reduction in use of training munitions at approved ranges.	No change from existing training by F-15C and F-15E in airspace. Continued use of chaff and flares in training airspace.
Air Quality	Change in training aircraft mix from F-15E and F-15C to F-22A and F-15C would not affect air quality. Most existing and even more F-22A flights would occur at altitudes above the mixing level for pollutants. No air quality or visibility impacts.	No change in training aircraft. No effects on air quality.
Physical Resources	No anticipated impact to soils, water, or other physical resources. Increase in mylar chaff wrappings that fall to ground similar to existing flare wrappings and not expected to affect physical resources. No noticeable change in use of chaff or flares in training. Continued altitude restrictions on flare use in approved locations.	No change from existing conditions. Continued use of chaff and flares in authorized airspace.

**TABLE 2.6-2. TRAINING SPECIAL USE AIRSPACE
(PAGE 2 OF 2)**

	<i>Proposed Action Options</i>	<i>No Action</i>
Biological Resources	Subsonic noise essentially the same as current conditions. No change in effects to wildlife. Increase in sonic booms may startle some animals. However, wildlife in the affected MOAs have previously experienced sonic booms and are likely habituated. Increase in mylar pieces from chaff use would not be expected to affect biological resources.	No change from existing conditions with military training overflights and sonic booms. No increase in sonic booms with the potential to startle wildlife.
Cultural Resources	No impacts to historic properties under the airspace. Increase in sonic booms, when discernible, may disturb users of land, but would not be expected to affect subsistence hunting.	No change from existing conditions.
Land Use/ Transportation/ Recreation	No change in land use or transportation on base. No affect to land use or land use patterns under the airspace. Recreationists, hunters, and fishermen, particularly under the Stony MOAs, may discern an increase in sonic booms.	No change from existing conditions. Continued presence of military aircraft and sonic booms under training airspace.
Socioeconomics	No discernible effects on social or economic conditions under the airspace. Increase in sonic booms, where discernible, may disturb individuals participating in subsistence or recreational hunting and fishing. Any disturbance would not be expected to affect activities under the airspace or local economies that rely on subsistence resources.	No change from existing conditions. No increase in annoyance due to increased sonic booms.
Environmental Justice	High concentrations of Alaska Natives under the airspace representative of populations throughout the state. No disproportionate impact to minority and low-income populations. No noticeable impact to children.	No change from existing conditions. Continued military training in airspace over rural populations.